

SECOND QUARTER 1995 GROUNDWATER SAMPLING REPORT

■ ■ ■ ■ ■ NL/TARACORP
SUPERFUND SITE
GRANITE CITY, ILLINOIS



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**QUARTERLY GROUNDWATER SAMPLING PROGRAM:
SECOND QUARTER 1995 GROUNDWATER SAMPLING EVENT
NL/TARACORP SUPERFUND SITE PREDESIGN FIELD INVESTIGATION**

1.0

INTRODUCTION

The 1995 second quarter groundwater sampling event for the NL/Taracorp Superfund Site (NL Site), in Madison County, Illinois, was conducted as part of Work Order No. 0029 of Woodward-Clyde's (W-C) indefinite delivery contract with the United States Army Corps of Engineers, Omaha District (USACE) (Contract No. DACW45-93-D-0005).

The objective of the quarterly groundwater sampling program is to provide additional information on groundwater quality for the NL Site. The second quarter groundwater sampling event consisted of sampling monitoring wells which had been previously sampled as part of the Pre-design Field Investigation (PDFI), and the collection of representative samples from private wells located at 1443 Grand Street in Madison, Illinois. The groundwater samples were analyzed for the thirteen Target Analyte List (TAL) metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, thallium, and zinc. The analytical results and field observations for this sampling event are included in this report.

FIELD ACTIVITIES**2.1 SAMPLING PROCEDURES**

The 1995 second quarter groundwater sampling event was conducted by W-C personnel on June 14 through 20, 1995. The 16 active monitoring wells were purged and sampled. The sampling procedure for fifteen of the sixteen monitoring wells consisted of purging and sampling using a submersible electric pump. This sampling procedure was specified by the USEPA. For the other well, MW-108S, purging and sampling had to be completed using a bailer. Due to a low water level and slow recovery, this well could not be purged and sampled using a submersible pump.

Unfiltered samples were collected from the sixteen wells. Additionally, field filtered samples using a 45 micron size filter were collected from 11 wells that had previously yielded results that were above the MCLs or action levels for one or more of the constituents on the TAL.

Twelve of the wells which were sampled were constructed of two-inch I.D. PVC screens and risers and ranged from 20 to 35 feet in depth. The other three wells which were sampled were constructed of two-inch I.D. stainless steel screens and risers and were approximately 70 feet deep. A well information summary for the 1995 second quarter sampling event is included in **Table 1**.

Additionally, the USEPA had identified five private wells owned by the resident at 1442 Grand Street, and requested that W-C collect representative samples from these wells for analysis. These wells are maintained as a source of water for a lawn and garden. Two of the five wells were purged and unfiltered samples collected by W-C personnel on September 26, 1995.

Prior to initiating any intrusive activities at a well site, each member of the sampling team was outfitted in the required personal protective equipment (PPE) specified in the project Site Safety and Health Plan (SSH). The required PPE consisted of a polycoated Tyvek, latex undergloves, and neoprene outergloves. The well cover was unlocked or the flush-mount cover

the well casing. Conductivity and pH meters were calibrated with prepared standards before and after each sample was taken. All sampling equipment, including the stainless steel bailers was decontaminated prior to use. In accordance with CDAP SOP No. 6, the decontamination procedure consisted of a wash in Alconox soap, a tap water rinse, an alcohol rinse and a final deionized water rinse. The submersible pump was also decontaminated in this manner before and after each use.

Well MW-108S could not be purged or sampled with the submersible electric pump due to a low water level and a slow recovery. Instead, a 1½ inch diameter stainless steel bailer was used to purge and sample the well. A new length of clean nylon rope was attached to the bailer. After purging five well volumes from the well, both filtered and unfiltered samples were collected and the appropriate sample jars were filled for metals analysis. The bailer was decontaminated in accordance with CDAP SOP No. 6. The protective well cover was closed and locked.

For the two wells that were sampled at 1443 Grand Street, the existing pumps in each well were used to purge and sample the wells. The purge water was discharged onto the lawn.

For the remaining fifteen wells that were sampled, a submersible electric pump was used to purge the five well volumes. An electric generator was set up downwind from the well. A new length of nylon rope and Tygon tubing was attached to the pump assembly. This assembly was then lowered into the well after being connected to the pump power converter and generator. After the removal of five well volumes, the pumping rate was reduced to the minimum rate possible (approximately one liter/minute). Both unfiltered samples and, where required, filtered samples were collected, and the appropriate sample containers were filled. After the sampling was completed, the Tygon tubing, pump, and pump cable were removed from the well and decontaminated. The pump was placed in buckets containing Alconox soap, a tap water rinse, an alcohol rinse and a final deionized water rinse. Each of the decontamination solutions was run through the pump and all of the Tygon tubing prior to use at the next well. All purge water was placed in a 100 gallon wastewater tank to be disposed of on the Taracorp pile. The used rope and used PPE equipment were put into plastic trash bags for proper disposal.

If required, bottles for QA/QC were also filled. A separate jar was filled to measure field parameters (pH, conductivity, temperature, and water clarity). The sample jars were

decontaminated, dried, and labeled as specified in CDAP SOP No. 5. Samples were then packed in iced coolers to be maintained at a temperature of approximately 4 °C. Field sampling sheets were completed for each sample. Information on sampling sheets included the time of sampling, sampling team members initials, and required analysis.

At the end of each day of sampling, chain-of-custody forms were completed and the sample jars packed in iced coolers for delivery to Environmetrics Laboratory in St. Louis, Missouri. QA samples collected each day were packed in iced coolers and shipped to the USACE-MRD, in Omaha, Nebraska, via Federal Express priority overnight delivery.

2.2 LABORATORY METHODOLOGY AND QUALITY CONTROL

Both the filtered and unfiltered groundwater samples collected from the NL Site were analyzed for the TAL Metals. Samples were analyzed in accordance with the PDFI CDAP and USEPA SW-846 procedures and protocols. Groundwater and QC sample analyses were conducted by Environmetrics Laboratory in St. Louis, Missouri, in accordance with the appropriate SOPs and the laboratory's QAPP. QA sample analyses were conducted at the USACE-MRD Laboratory.

The quality control level of effort for the groundwater investigation consisted of collecting and submitting the following samples to Environmetrics:

- 3 Field duplicates
- 1 MS/MSD per batch (2 MS/MSDs were performed by Environmetrics)
- 1 Equipment rinsate blank

The quality assurance level of effort for the groundwater investigation consisted of collecting and submitting the following samples to the USACE:

- 3 Field duplicates
- 1 MS/MSD
- 1 Equipment rinsate blank

The quality control and quality assurance levels of effort are summarized in **Table 2**.

The analytical method specific Data Quality Objectives (DQO's) for groundwater samples collected from the NL Site included precision, accuracy, and sensitivity criteria. The QA objective was to achieve the QC acceptance criteria required by the analytical protocols in SW-846. The initial validation of laboratory data was performed by Environmetrics. W-C conducted an independent assessment of the laboratory data packages. The independent assessment is presented with the attached analytical data in **Attachment 1**. The Chemical Quality Assurance Report prepared by the MRD Laboratory which summarizes the quality assurance testing is included in **Attachment 2**.

Corrective action was applied when any measurement system failed to follow the laboratory QAPP or CDAP Data Quality Objectives. The laboratory QA Supervisor reviewed the data generated to verify that all quality control samples were within the established control limits. Data generated with laboratory control samples that did not fall within control limits were considered suspect, and the sample analysis was repeated or sample results were reported with qualifiers if reanalysis was not possible.

Analytical data that was generated which fell within acceptable control limits were judged to be in control. Data generated which fell outside control limits are considered suspect and are reported with qualifiers. Data for all samples appear usable with only minor qualifications necessary.

3.0**FIELD OBSERVATIONS**

The depth to groundwater ranged from approximately two to four feet higher than that measured during the previous sampling event which was conducted during October, 1994. The higher groundwater elevations are attributed to the above average precipitation rates during the spring of 1995.

During this sampling event, the water in nine of the sixteen monitoring wells was generally clear. For three of the monitoring wells, MW-104, MW-107S, and MW-108S, the water appeared to be slightly cloudy to very cloudy and brown in color with trace of fine sand and silt. For MW-108D, the water appeared to be clear with a trace of silt. The poor water clarity and the sampling problems in the shallow wells (MW-104, MW-107S, and MW-108S) were probably the result of historically low water levels and slow recoveries that have not allowed them to be adequately developed.

The pH measurements for the wells sampled ranged from 5.7 to 7.0. Groundwater temperatures ranged from 11 to 27°C. Conductivities generally ranged from 500 to 2300 $\mu\text{mhos}/\text{cm}$. These field parameters were similar to the parameters measured during the previous sampling events. A summary of field parameters measured during the sampling event is provided in Table 3.

ANALYTICAL RESULTS - METALS

Groundwater samples were analyzed for the 13 TAL metals: antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc. The analytical results for this sampling event are included in **Table 4** and historical results are included in **Table 5**. The laboratory data from this sampling event are included in **Attachment 1**. Also included in **Tables 4** and **5** are the maximum contaminant levels (MCLs) or action levels for each constituent promulgated under the Safe Drinking Water Act and the Illinois Groundwater Quality Standards for Class I: Potable Resource Groundwater.

For unfiltered samples, all metals of concern except for beryllium and silver were detected at concentration levels above the practical quantitation limits (PQLs) in at least one sample collected from the monitoring wells (**Table 4**). The PQL is defined as the lowest concentration of a given analyte that can be reliably achieved within the specified limits of accuracy and precision during routine laboratory operating conditions. Unfiltered samples from six monitoring wells had total lead concentrations greater than the USEPA action level of 0.015 mg/L, and greater than the Illinois Class I groundwater lead standard of 0.0075 mg/L. The six wells with their respective measured lead concentrations were:

<u>Monitoring Well</u>	<u>Total Lead Results (mg/L)</u>
MW-104	0.11
MW-104-92	0.186
MW-106S	0.177
MW-107S	0.0247
MW-107D	0.0172/0.028(dup.)
MW-108S	0.73

Additionally, two wells had total lead concentrations greater than the Illinois Class I groundwater standard of 0.0075 mg/L. The two wells with their respective measured lead concentrations were:

<u>Monitoring Well</u>	<u>Total Lead Results (mg/L)</u>
MW-102	0.0131
MW-105S	0.0128

For filtered samples, cadmium, nickel, selenium, thallium, and zinc were detected at concentrations above the PQLs in at least one sample collected during this sampling event.

The wells sampled during the event which had metal concentrations that were above either the respective USEPA MCLs, Illinois Class I groundwater standards, or both, were wells MW-101, MW-102, MW-104, MW-104-92, MW-105S, MW-106S, MW-107S, MW-107D, MW-108S, and MW-108D (**Table 4**). The following summarizes which metals of concern were detected at levels above the standards for each well:

- MW-102: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-104: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-104-92: The lead concentration (unfiltered) was above the respective USEPA action level and Illinois Class I standard.
- MW-105S: The lead concentration (unfiltered) was above the Illinois Class I standard.
- MW-106S: The lead concentration (unfiltered) was above the respective USEPA action levels and the Illinois Class I standard.

- MW-107S: The lead concentration (unfiltered) was above the USEPA action level, and the Illinois Class I standard.
- MW-107D: The lead (unfiltered and unfiltered field duplicate) was above the above the respective USEPA action levels and the Illinois Class I standard.
- MW-108S: The arsenic (unfiltered), cadmium (filtered and unfiltered), lead (unfiltered), and nickel (filtered and unfiltered) concentrations were above the respective USEPA MCLs or action levels, and the Illinois Class I standards. The thallium concentrations (filtered and unfiltered) were above the respective USEPA MCL.
- MW-108D: The cadmium (filtered), and nickel (filtered and unfiltered) concentrations were above the respective USEPA MCLs or action levels, and the Illinois Class I standards.

For the two monitoring wells located upgradient of the Taracorp pile, MW-110 and MW-111-92, the results for the thirteen metals were at or below the PQL. The samples collected from MW-110 and MW-111-92 each detected arsenic above the PQL, but below the respective USEPA MCLs or Illinois Class I standards. The sample from MW-111-92 also detected lead at a level equal to the PQL (0.0009 mg/L). Quality control samples consisting of field duplicates were taken from MW-107D and MW-111. Constituent metal concentration levels for both duplicate samples were representative of the respective groundwater sample (**Table 4**).

The other two offsite wells that were sampled, Grand 1443-1 and Grand 1443-2, detected antimony, arsenic, lead, selenium, and thallium at levels that were above the PQLs, but below the respective USEPA MCLs and Illinois Class I groundwater standards.

Quality assurance samples consisting of field duplicates were taken from MW-104-92 and MW-108D. Analysis of QA samples was completed by the USACE MRD laboratory. The results of these QA samples are included in **Attachment 2**.

The USACE MRD laboratory noted only two data discrepancies between the Environmetrics data and the QA laboratory data. Both discrepancies were identified in sample WMW108-DOGGWQF:

- For Selenium, the result of the Environmetrics analysis was <0.0008 mg/L; the result of the USACE-MRD analysis was 3.0 µg/L (0.003mg/L).
- For Zinc, the result of the Environmetrics analysis was 2.3 mg/L; the result of the USACE-MRD analysis was 12.0 µg/L (0.012 mg/L).

Based on these comparisons, the USACE-MRD laboratory concluded that the Environmetrics data was acceptable. Only zinc was detected above the PQL for the QA rinsate sample, WMW112-10GGWT, with a concentration of 7 µg/L (0.007 mg/L).

The analytical results from each well for this sampling event were fairly consistent with the previous sampling events (**Table 5**). The differences in sample concentrations from one sampling event to the other may depend on various parameters including (1) sampling methods, (2) water level fluctuations, (3) soil permeability, (4) soil heterogeneity, and (5) dispersion and adsorption properties of the surrounding soils.

TABLES

TABLE 1
WELL INFORMATION
 Second Quarter 1995 Groundwater Sampling Event
 NL/Taracorp Superfund Site

WELL NUMBER	MEASURED TOTAL DEPTH (FEET)	WELL DIAM. (IN.)	SCREEN INTERVAL (FEET)	SCREEN MATERIAL	RISER ELEV. (MSL)	WATER LEVEL (FEET)	WATER ELEVATION (FEET)	WELL VOLUME (GALS.)	PURGE VOLUME (GALS.)
101	25.98	2	15-25	PVC	421.45	16.21	405.24	1.6	8.0
103	BENT RISER	2	15-25	PVC	417.17	NA			
104	28.33	2	17-27	PVC	422.25	17.74	404.51	1.7	8.6
105S	28.8	2	21-26	PVC	428.66	24.23	404.43	0.7	3.7
106S	22.84	2	15.79-20.79	PVC	423.71	19.25	404.46	0.6	2.9
107S	24.10	2	17.46-22.46	PVC	420.78	11.49	409.29	2.1	10.3
108S	23.4	2	15.4-20.4	PVC	421.71	18.94	402.77	0.7	3.6
109	32.6	2	29-34	PVC	416.64	11.30	405.34	3.5	17.4
110	35	2	30-35	PVC	418.49	15.37	403.12	3.2	16.0
GRAND1443-1	28 (approximate)	4	Unknown	SS (?)	Unknown	Unknown	Unknown	9.0 (est.)	50.0

TD = Total Depth

MW103-91 was located within the exclusion zone for soil stabilization activities on the industrial property and could not be sampled.

TABLE 2
GROUNDWATER SAMPLING SUMMARY
Second Quarter 1995 Groundwater Sampling Event
NL/Taracorp Superfund Site

WELL NUMBER	FIELD SAMPLES *	QUALITY ASSURANCE			QUALITY CONTROL		
		FIELD DUPLICATE*	MS/MSD	RINSATE BLANKS	FIELD DUPLICATE*	MS/MSD**	RINSATE BLANKS
101	2						
102	2						
104-92	2	2	1 / 1				
106S	2						
107S	2						
108S	2						
109	1						
110	1					1 / 1	
112				1			1
GRAND1443-1	1						
Frequency (%)		11	4 / 4	4	11	8 / 8	4

* Where two field samples or field duplicates are noted, both a field filtered and nonfiltered sample were collected.

** Matrix Spike (MS)/ Matrix Spike Duplicate (MSD) samples were analyzed at a frequency of one sample per laboratory batch.

TABLE 3
FIELD PARAMETERS
Second Quarter 1995 Groundwater Sampling Event
NL/Taracorp Superfund Site

WELL ID	SAMPLING DATE	pH	CONDUCTIVITY ($\mu\text{mhos}/\text{cm}$)	TEMP. (°C)	WATER CLARITY
MW-102	14-Jun-95	6.51	910	21.3	Clear
MW-104	14-Jun-95	6.31	509	22.2	Slightly Cloudy, Light brown
MW-105S	15-Jun-95	6.63	1250	21.9	Clear
MW-106D	15-Jun-95	6.72	940	25.1	Clear
MW-107D	16-Jun-95	6.7	960	27.4	Clear
MW-108D	15-Jun-95	6.62	2380	25.9	Clear w/ Trace Silt
MW-109-92	16-Jun-95	6.72	1040	23.5	Clear
MW-111-92	20-Jun-95	6.88	1080	26.7	Clear
GRAND1443-1	26-Sep-95	6.54	960	11	Clear
GRAND1443-2	26-Sep-95	7.03	700	18	Clear

NOTE: Water parameters were measured with a Horiba U-10 water quality meter.

TABLE 4
METALS RESULTS OF SECOND QUARTER 1995
GROUNDWATER SAMPLING EVENT
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-101 MW-102 MW-104 MW-104-92 MW-105S MW-106S MW-106D MW-107S MW-107D								
				MW-101	MW-102	MW-104	MW-104-92	MW-105S	MW-106S	MW-106D	MW-107S	MW-107D
Antimony	mg/l	0.006	-	<0.0014	<0.0012	0.0034	0.0022	0.0052	0.0042	<0.0012	0.0015	0.0025
Arsenic	mg/l	0.05	0.05	0.0268	0.0034	0.0125	0.0021	0.0014	0.0067	0.0018	0.0053	0.002
Beryllium	mg/l	0.004	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium	mg/l	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.010	<0.010	0.011	<0.010	<0.010	0.019	<0.010	0.045	0.011
Copper	mg/l	1.3*	0.65	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.035	0.035
Lead	mg/l	0.015*	0.0075	0.003	0.0131 ⁽²⁾	0.11 ⁽³⁾	0.186 ⁽³⁾	0.0128 ⁽²⁾	0.177 ⁽³⁾	<0.0009	0.0247 ⁽³⁾	0.0172 ⁽³⁾
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.067	<0.040
Selenium	mg/l	0.05	0.05	0.0049	0.0063	0.0054	<0.0008	0.005	0.0061	0.0089	0.0061	<0.0008
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.0010	<0.0010	<0.001	<0.001	0.0012	<0.0010	<0.0010	<0.001	<0.001
Zinc	mg/l	-	5.0	0.024	0.032	0.039	<0.020	0.025	0.082	<0.020	0.149	0.061

TABLE 4
METALS RESULTS OF SECOND QUARTER 1995
GROUNDWATER SAMPLING EVENT
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-107D QC FIELD DUPLICATE							MW-11192 QC FIELD DUPLICATE	MW-112 QC RINSATE BLANK
					MW-108S	MW-108D	MW-109	MW-109-92	MW-110	MW-111-92		
Antimony	mg/l	0.006	-	0.0018	0.0028	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Antimony, filtered	mg/l	0.006	-	0.0018	0.0021	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Arsenic	mg/l	0.05	0.05	0.0102	0.0892 ⁽³⁾	0.0032	0.0024	0.0012	0.0013	0.0012	0.0011	<0.0004
Arsenic, filtered	mg/l	0.05	0.05	0.0027	0.0011	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
Beryllium	mg/l	0.004	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Beryllium, filtered	mg/l	0.004	-	0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Cadmium	mg/l	0.005	0.005	<0.005	0.695 ⁽³⁾	0.046 ⁽³⁾	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium, filtered	mg/l	0.005	0.005	0.0005	0.016 ⁽³⁾	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Chromium	mg/l	0.1	0.1	0.014	0.091	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chromium, filtered	mg/l	0.1	0.1	0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	0.032	0.141	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Copper, filtered	mg/l	1.3*	0.65	0.025	0.122	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.028 ⁽³⁾	0.73 ⁽³⁾	0.0011	0.0012	<0.0009	<0.0009	0.0009	<0.0009	<0.0009
Lead, filtered	mg/l	0.015*	0.0075	0.0065	0.0063	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009
Mercury	mg/l	0.002	0.002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Mercury, filtered	mg/l	0.002	0.002	0.0002	0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.040	0.284 ⁽³⁾	0.137 ⁽³⁾	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Nickel, filtered	mg/l	0.1	0.1	0.040	0.115	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.0008	<0.0008	<0.0008	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0009
Selenium, filtered	mg/l	0.05	0.05	0.0004	0.0003	<0.0008	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Silver, filtered	mg/l	-	0.05	0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.010	0.464 ⁽¹⁾	<0.0010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium, filtered	mg/l	0.002	-	0.001	0.005 ⁽¹⁾	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Zinc	mg/l	-	5.0	0.05	1.01	4.78	<0.020	<0.020	<0.021	<0.020	0.03	<0.020
Zinc, filtered	mg/l	-	5.0	0.023	0.533	3.31	<0.020	<0.020	<0.021	<0.020	0.03	<0.020

TABLE 4
METALS RESULTS OF SECOND QUARTER 1995
GROUNDWATER SAMPLING EVENT
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS	1443 GRAND WELL 1 (R. Clutts)	1443 GRAND WELL 2 (R. Clutts)
			(mg/L)		
Antimony	mg/l	0.006	-	0.0015	<0.0012
Arsenic	mg/l	0.05	0.05	0.0023	0.0008
Beryllium	mg/l	0.004	-	<0.005	<0.005
Cadmium	mg/l	0.005	0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.005	0.0012
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.040	<0.040
Selenium	mg/l	0.05	0.05	0.0021	0.0037
Silver	mg/l	-	0.05	<0.010	<0.010
Thallium	mg/l	0.002	-	0.001	<0.001
Zinc	mg/l	-	5.0	<0.020	<0.020

J - The associated numerical value is an estimated quantity.

UJ - The compound was analyzed for but was not detected.

The sample quantitation limit is an estimated quantity.

* - Action Level that triggers treatment.

(1) - Sample concentration is above the MCL or action level.

(2) - Sample concentration is above the Illinois Groundwater Quality Standard for a Class I Potable Resource.

(3) - Sample concentrations is above both the MCL and the Class I Groundwater Quality Standard.

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-101							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.014 (1)	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0014
Arsenic	mg/l	0.05	0.05	4.2 (3)	0.77 (3)	0.46 (3)	0.181 (3)	0.017	0.015	1.58(3)	0.268 (3)
Beryllium	mg/l	0.004	-	0.0026	<0.0006	0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0039	0.0053 (3)	<0.005	0.006 (3)	<0.005	<0.005	0.078(3)	<0.005
Chromium	mg/l	0.1	0.1	0.034	0.018 U	0.077	0.047	<0.010	0.011	0.051	<0.010
Copper	mg/l	1.3*	0.65	0.06	0.017	0.039	0.063	0.072	0.058	0.048	<0.025
Lead	mg/l	0.015*	0.0075	0.130 (3)	0.023 (3)	0.027 (3)	0.077 (3)	<0.003	0.008(2)	0.054(3)	0.003
Mercury	mg/l	0.002	0.002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	0.13 (3)	0.027	0.077	0.072	<0.040	<0.040	0.154(3)	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	0.007	<0.005	<0.005	<0.005	0.0049
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	0.002	<0.002	<0.0010
Zinc	mg/l	-	5.0	0.35	0.098	0.11	0.199	0.052	0.068	0.246	0.024

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-102				
				SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.050	<0.006	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	0.015	<0.010	<0.010	<0.010	0.0034
Beryllium	mg/l	0.004	-	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	0.027	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	0.028	<0.025	0.036	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.136 (3)	<0.003	<0.003	0.038(3)	0.0131 (2)
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	0.062	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	0.015	<0.005	<0.005	<0.005	0.0063
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.050	<0.002	<0.002	<0.002	<0.0010
Zinc	mg/l	-	5.0	0.123	<0.020	0.031	0.028	0.032

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-103-91					
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	OCTOBER 1994
Antimony	mg/l	0.006	-	<0.002	0.014 (1)	<0.060	<0.050	<0.006	<0.006
Arsenic	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.010	<0.010	<0.010
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004
Cadmium	mg/l	0.005	0.005	0.0017	<0.005	<0.005	<0.005	0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.002	0.029 U	<0.013	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.0027	0.0038	<0.002	<0.003	<0.003	<0.003
Mercury	mg/l	0.002	0.002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	0.012	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002
Zinc	mg/l	-	5.0	0.036	0.074 J	<0.020	<0.020	<0.020	<0.020

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-104							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.023 (1)	0.013 (1)	<0.060	<0.050	<0.006	<0.006	<0.006	0.0034
Arsenic	mg/l	0.05	0.05	0.086 (3)	0.087 (3)	0.0046	0.018	<0.010	<0.010	<0.010	0.0125
Beryllium	mg/l	0.004	-	0.0019	0.00322	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0027	<0.005	<0.005	0.005 (3)	0.006 (3)	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	0.047	0.098 J	<0.013	0.035	<0.010	0.015	0.019	0.011
Copper	mg/l	1.3*	0.65	0.064	0.097	<0.014	<0.025	<0.025	<0.025	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.47 (3)	0.42 (3)	0.013 (2)	0.043 (3)	0.019(3)	0.032(3)	0.091(3)	0.11 (2)
Mercury	mg/l	0.002	0.002	0.0003	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002
Nickel	mg/l	0.1	0.1	0.12 (3)	0.19 (3)	<0.023	0.047	<0.040	<0.040	0.052	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	0.0054
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.24	0.38 J	<0.020	0.072	<0.020	0.040	0.050	0.039

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-104-92							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.007 (1)	0.01 (1)	<0.060	<0.050	<0.006	<0.006	<0.006	0.0022
Arsenic	mg/l	0.05	0.05	0.0088	0.0032	<0.003	<0.010	<0.010	<0.010	<0.010	0.0021
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0033	<0.005	<0.005	0.005 (3)	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	0.002	0.034 J	<0.013	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025	0.047	<0.025
Lead	mg/l	0.015*	0.0075	0.44 (3)	0.27 (3)	0.043 (3)	0.520/0.480 (3)	0.036(3)	0.054(3)	0.090(3)	0.186 (3)
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.0008
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.082	0.066 J	<0.020	0.037	<0.020	0.020	<0.020	<0.020

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-105S					MW-106S			
				SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995	SEPTEMBER 1993	APRIL 1994	JULY 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.050	<0.006	<0.006	<0.006	0.0052	<0.050	0.008 (1)	<0.006	0.0042
Arsenic	mg/l	0.05	0.05	<0.010	<0.010	<0.010	0.029	0.0014	0.014	0.081 (3)	0.043	0.0067
Beryllium	mg/l	0.004	-	<0.005	<0.004	<0.004	<0.004	<0.005	<0.005	0.007 (1)	0.006(1)	<0.005
Cadmium	mg/l	0.005	0.005	<0.005	<0.005	<0.005	0.017(3)	<0.005	<0.005	0.005	0.008(3)	<0.005
Chromium	mg/l	0.1	0.1	0.029	<0.010	0.026	0.118(3)	<0.010	0.476 (3)	0.183 (3)	0.137(3)	0.019
Copper	mg/l	1.3*	0.65	<0.025	<0.025	<0.025	0.055	<0.025	0.056	0.179	0.16	<0.025
Lead	mg/l	0.015*	0.0075	0.015 (3)	0.008 (2)	0.035(3)	0.149(3)	0.0128 (2)	0.143 (3)	0.776 (3)	0.269(3)	0.177 (3)
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006 (3)	0.0003	<0.0002
Nickel	mg/l	0.1	0.1	<0.040	<0.040	<0.040	0.122(3)	<0.040	0.366 (3)	0.22 (3)	0.208(3)	<0.040
Selenium	mg/l	0.05	0.05	0.016	0.011	<0.005	<0.005	0.005	0.011	<0.005	<0.005	0.0061
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.050	<0.002	<0.002	<0.002	0.0012	<0.050	0.003 (1)	0.003 (1)	<0.0010
Zinc	mg/l	-	5.0	0.039	<0.020	0.045	0.360	0.025	0.181	0.876	0.671	0.082

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-106D							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.003	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	0.013	0.0032	<0.003	<0.010	<0.010	<0.010	<0.010	0.0018
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.002	0.015 U	<0.013	0.019	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	0.063	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.019 (3)	0.019 (3)	<0.002	<0.003	<0.003	0.012 (2)	<0.003	<0.0009
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	0.026	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	0.0077	0.01	0.0098	0.013	0.005 J	0.008	0.006	0.0089
Silver	mg/l	0.03	0.03	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	<0.020	0.067	<0.020	<0.020	0.026	0.041	<0.020	<0.020

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-107S							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.008 (1)	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	0.0015
Arsenic	mg/l	0.05	0.05	0.044	0.10 (3)	0.026	<0.010	<0.010	0.032	0.093(3)	0.0053
Beryllium	mg/l	0.004	-	0.002	0.0079 (1)	0.0019	<0.005	<0.004	<0.004	0.006(1)	<0.005
Cadmium	mg/l	0.005	0.005	0.0032	0.010 (3)	<0.005	<0.005	<0.005	0.006(3)	0.029(3)	<0.005
Chromium	mg/l	0.1	0.1	0.042	0.35 J (3)	0.061	0.014	0.017	0.270(3)	0.142(3)	0.045
Copper	mg/l	1.3*	0.65	0.064	0.3	0.066	<0.025	<0.025	0.116	0.222	0.035
Lead	mg/l	0.015*	0.0075	0.14 (3)	0.52 (3)	0.087 (3)	0.047 (3)	0.007	0.077(3)	0.176(3)	0.0247 (3)
Mercury	mg/l	0.002	0.002	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	0.0018	0.0004	0.0002
Nickel	mg/l	0.1	0.1	0.11 (3)	0.43 (3)	0.092	<0.040	<0.040	0.257(3)	0.280(3)	0.067
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	0.011	<0.005	<0.005	0.010	0.0061
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.25	0.86	0.18	0.084	0.041	0.282	0.59	0.149

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-107D							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	0.005	<0.011	<0.060	<0.050	<0.006	0.006 U	<0.006	0.0025
Arsenic	mg/l	0.05	0.05	0.065 (3)	0.04	0.024	<0.010	<0.010	<0.010	<0.010	0.002
Beryllium	mg/l	0.004	-	0.0016	0.0017	0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	0.044	0.067 J	0.078	0.076	<0.010	0.118(3)	0.113(3)	0.011
Copper	mg/l	1.3*	0.65	0.052	0.054	0.027	<0.025	<0.025	<0.025	0.100	0.035
Lead	mg/l	0.015*	0.0075	0.11 (3)	0.12 (3)	0.067 (3)	<0.003	<0.003	0.006	0.015(2)	0.0172 (3)
Mercury	mg/l	0.002	0.002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0010 J	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	0.054	0.057	0.045	<0.040	<0.040	0.092	0.086	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	0.005 U	<0.005	<0.0008
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010 UJ	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.22	0.25	0.091	0.05	<0.020	0.042	0.054	0.061
Zinc indirect	mg/l	-	>0								

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-107D QC FIELD DUPLICATE			
				APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.006	<0.006	<0.006	0.0018
Boron	mg/l	0.002	-	<0.002	<0.002	<0.002	0.001
Arsenic	mg/l	0.05	0.05	<0.010	<0.010	<0.010	0.0102
Beryllium	mg/l	0.004	-	<0.004	<0.004	<0.004	<0.005
Cesium	mg/l	0.005	-	<0.005	<0.005	<0.005	0.0005
Cadmium	mg/l	0.005	0.005	<0.005	<0.005	0.006(3)	<0.005
Chromium	mg/l	0.1	0.1	<0.010	0.158(3)	0.062	0.014
Copper	mg/l	1.3*	0.65	<0.025	<0.025	0.253	0.032
Lead	mg/l	0.015*	0.0075	<0.003	0.006	0.093(3)	0.028 (3)
Mercury	mg/l	0.002	0.002	<0.0002	0.0012	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.040	0.116(3)	0.067	<0.040
Selenium	mg/l	0.05	0.05	<0.005	<0.005	<0.005	<0.0008
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.010
Zinc	mg/l	-	5.0	<0.020	0.032	0.189	0.05

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-108S				
				SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.050	0.007 (1)	<0.006	0.010(1)	0.0028
Arsenic	mg/l	0.05	0.05	0.109 (3)	0.017	0.025	0.091(3)	0.0892 (3)
Beryllium	mg/l	0.004	-	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.475 (3)	0.180 (3)	0.225(3)	0.963(3)	0.695 (3)
Chromium	mg/l	0.1	0.1	0.082	0.043	1.35(3)	0.318(3)	0.091
Copper	mg/l	1.3*	0.65	0.092	0.039	0.140	0.108	0.141
Lead	mg/l	0.015*	0.0075	1.02 (3)	0.312 (3)	0.246(3)	1.17(3)	0.73 (3)
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	0.0015	0.0003	0.0004
Nickel	mg/l	0.1	0.1	0.254 (3)	0.075	0.980(3)	0.492(3)	0.284 (3)
Selenium	mg/l	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.0008
Silver	mg/l	-	0.05	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	0.07 (1)	0.008 (1)	0.011(1)	0.018(1)	0.464 (1)
Zinc	mg/l	-	5.0	0.567	0.177	0.376	0.759	1.01

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-108D							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.008	0.022 (1)	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	<0.003	0.018	<0.003	<0.010	<0.010	<0.010	<0.010	0.0032
Beryllium	mg/l	0.004	-	<0.0006	0.00202	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	8.5 (3)	9.6 (3)	1.9 (3)	4.51 (3)	5.41 (3)	10.3(3)	11.6(3)	0.046 (3)
Chromium	mg/l	0.1	0.1	0.006	0.073 J	0.022	<0.010	<0.010	0.110(3)	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	0.045	<0.014	<0.025	<0.025	0.053	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.023 (3)	0.14 (3)	0.0043	<0.003	<0.003	0.102(3)	0.007	0.0011
Mercury	mg/l	0.002	0.002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	0.46 (3)	0.63 (3)	0.17 (3)	0.313 (3)	0.435 (3)	0.793(3)	0.849(3)	0.137 (3)
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.015	<0.005	<0.005	<0.005	<0.005	<0.0008
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	0.012	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	0.046 (1)	0.046 (1)	0.028 (1)	<0.050	0.045 (1)	0.094(1)	0.133(1)	<0.001
Zinc	mg/l	-	5.0	28 (2)	34 (2)	7.6 (2)	18.1 (2)	23.1 (2)	38.6(2)	44.9(2)	4.78 (2)

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-108D			
				QC FIELD DUPLICATE			
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050
Arsenic	mg/l	0.05	0.05	<0.003	0.023	<0.003	<0.010
Beryllium	mg/l	0.004	-	0.0007	0.00188	<0.0006	<0.005
Cadmium	mg/l	0.005	0.005	9.0 (3)	9.2 (3)	1.9 (3)	4.42 (3)
Chromium	mg/l	0.1	0.1	0.006	0.084 J	0.029	<0.010
Copper	mg/l	1.3*	0.65	<0.014	0.044	<0.014	<0.025
Lead	mg/l	0.015*	0.0075	0.026 (3)	0.15 (3)	0.0038	<0.003
Mercury	mg/l	0.002	0.002	<0.0002	0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	0.47 (3)	0.64 (3)	0.18 (3)	0.302 (3)
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.015	<0.005
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010
Thallium	mg/l	0.002	-	0.048 (1)	0.051 (1)	0.029 (1)	0.05 (1)
Zinc	mg/l	-	5.0	28 (2)	34 (2)	7.7 (2)	17.9 (2)

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-109							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.010	<0.010	<0.010	<0.010	0.0024
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0028	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.002	<0.013	<0.013	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025	0.027	<0.025
Lead	mg/l	0.015*	0.0075	0.0046	0.019 (3)	<0.002	<0.003	<0.003	<0.003	<0.003	0.0012
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	0.059	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.0004
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.057	0.077 J	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

**TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE**

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-109-92							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012
Boron	mg/l	0.900	-	-	-	-	-	-	-	-	-
Arsenic	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.010	<0.010	<0.010	<0.010	0.0012
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0018	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	0.003	0.021 U	<0.013	<0.010	0.011	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025	0.154	<0.025
Lead	mg/l	0.015*	0.0075	0.018 (3)	0.0038	<0.002	<0.003	<0.003	<0.003	<0.003	<0.0009
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	<0.0004
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.081	0.057 J	<0.020	<0.020	<0.020	<0.020	0.069	<0.020

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-110								MW-110 QC FIELD DUPLICATE
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995	
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012	<0.006
Antimony, filtered	mg/l	0.006*	-									
Arsenic	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.010	<0.010	<0.010	<0.010	0.0013	<0.010
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005	<0.004
Boron	mg/l	0.004	-									
Cadmium	mg/l	0.005	0.005	0.0013	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium, filtered	mg/l	0.005*	0.005									
Chromium	mg/l	0.1	0.1	<0.002	<0.013	<0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chromium, filtered	mg/l	0.1*	0.1									
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	0.043	0.084	<0.025	0.070
Copper, filtered	mg/l	1.3*	0.65									
Lead	mg/l	0.015*	0.0075	0.0042	0.017 (3)	<0.002	<0.003	<0.003	<0.003	<0.003	0.0009	<0.003
Lead, filtered	mg/l	0.015*	0.0075									
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Mercury, filtered	mg/l	0.002*	0.002									
Nickel	mg/l	0.1	0.1	<0.023	0.033	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Nickel, filtered	mg/l	0.1*	0.1									
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005 J	<0.005	<0.005	<0.0004	<0.005
Selenium, filtered	mg/l	0.05*	0.05									
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Silver, filtered	mg/l	-*	0.05									
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001	<0.002
Thallium, filtered	mg/l	0.002*	-									
Zinc	mg/l	-	5.0	0.043	0.078	<0.020	<0.020	<0.020	0.092	0.051	<0.021	0.081
Zinc, filtered	mg/l	-*	5.0									

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-111-92							
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	0.0046	0.0037	<0.003	<0.010	<0.010	<0.010	<0.010	0.0012
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	<0.0003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.002	0.024 U	<0.013	<0.010	<0.010	0.015	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	0.029	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	0.003	0.009 (2)	<0.002	<0.003	<0.003	0.003 U	<0.003	0.0009
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	0.005 U	<0.005	<0.0004
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.043	0.073	<0.020	<0.020	<0.020	0.088	<0.020	<0.020

TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

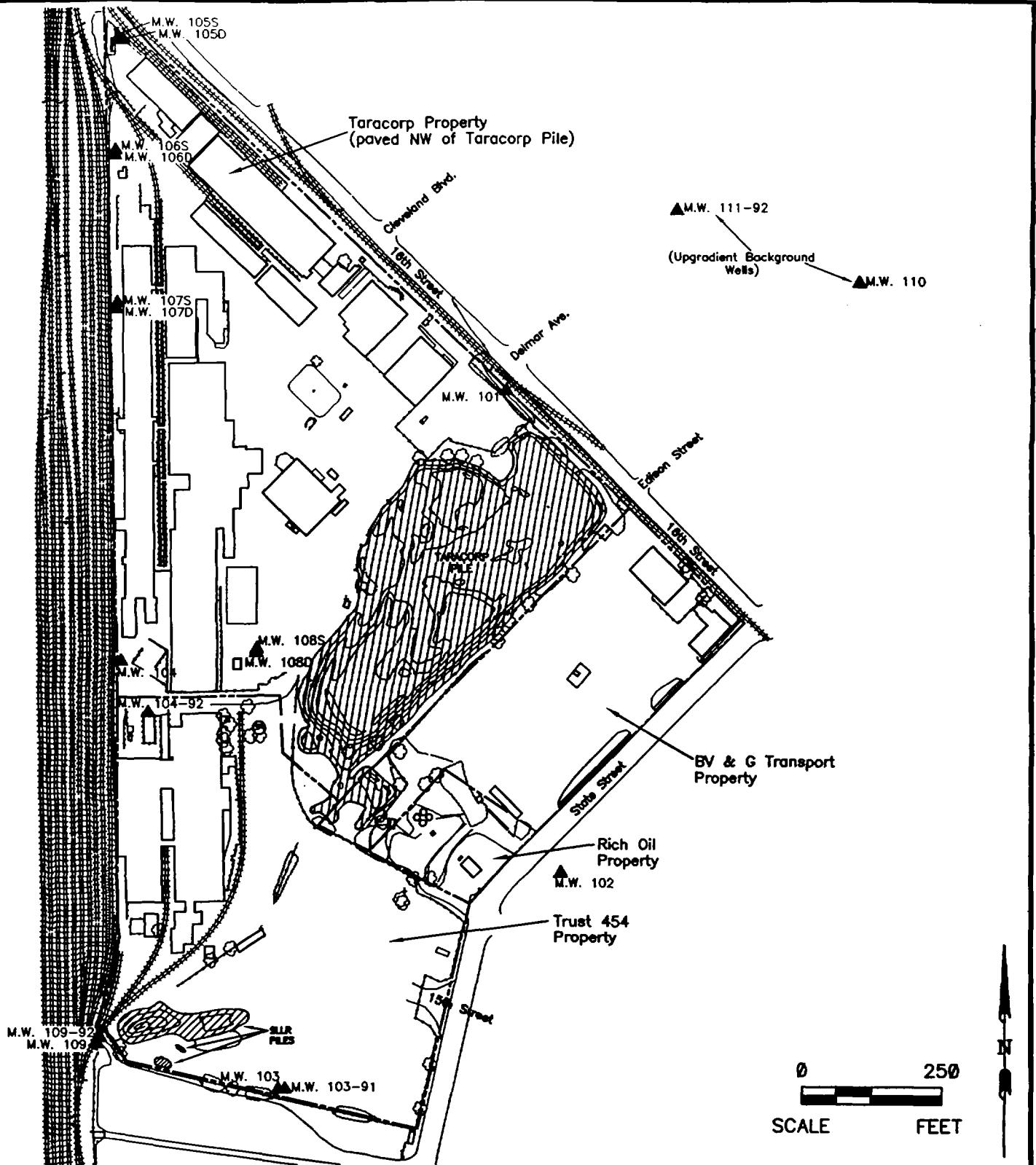
Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-111-92						
				QC FIELD DUPLICATE						
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.0012
Arsenic	mg/l	0.05	0.05	0.004	<0.003	<0.003	<0.010	<0.010	<0.010	0.0011
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.005
Cadmium	mg/l	0.005	0.005	0.0004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	mg/l	0.1	0.1	<0.002	0.027 U	<0.013	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.003	<0.003	<0.003	<0.0009
Lead	mg/l	0.015*	0.0075	0.0094 (2)	0.0072	<0.002	<0.0002	<0.0002	<0.0002	<0.0002
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.040	<0.040	<0.040	<0.040
Nickel	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.004
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	<0.001
Zinc	mg/l	-	5.0	0.059	0.068	<0.020	<0.020	<0.020	<0.020	0.03

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TABLE 5: METALS RESULTS OF HISTORICAL GROUNDWATER SAMPLING EVENTS
NL/TARACORP SUPERFUND SITE

Parameter	Unit	MCLs (mg/L)	ILLINOIS CLASS I STANDARDS (mg/L)	MW-112 QC RINSATE BLANK								MW-113 QC RINSATE
				JULY 1992	OCTOBER 1992	MARCH 1993	SEPTEMBER 1993	APRIL 1994	JULY 1994	OCTOBER 1994	JUNE 1995	APRIL 1994
Antimony	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012	<0.006
Antimony, filtered	mg/l	0.006	-	<0.002	<0.011	<0.060	<0.050	<0.006	<0.006	<0.006	<0.0012	<0.006
Arsenic	mg/l	0.05	0.05	0.0032	<0.003	<0.003	<0.010	<0.010	<0.010	<0.010	<0.0004	<0.010
Beryllium	mg/l	0.004	-	<0.0006	<0.0006	<0.0006	<0.005	<0.004	<0.004	<0.004	<0.005	<0.004
Cadmium	mg/l	0.005	0.005	<0.0003	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium, filtered	mg/l	0.005	0.005	<0.002	<0.013	<0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chromium, total	mg/l	0.1	0.1	<0.002	<0.013	<0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Copper, filtered	mg/l	1.3*	0.65	<0.014	<0.014	<0.014	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Lead	mg/l	0.015*	0.0075	<0.002	<0.002	<0.002	<0.003	<0.003	<0.003	<0.003	<0.0009	<0.003
Lead, filtered	mg/l	0.015*	0.0075	<0.002	<0.002	<0.002	<0.003	<0.003	<0.003	<0.003	<0.0009	<0.003
Mercury	mg/l	0.002	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel, filtered	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Nickel, total	mg/l	0.1	0.1	<0.023	<0.023	<0.023	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	0.0009	<0.005
Selenium, filtered	mg/l	0.05	0.05	<0.003	<0.003	<0.003	<0.005	<0.005	<0.005	<0.005	0.0009	<0.005
Silver	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Silver, filtered	mg/l	-	0.05	<0.0004	<0.009	<0.009	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Thallium	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	0.003(1)	<0.001	<0.002
Thallium, filtered	mg/l	0.002	-	<0.002	<0.002	<0.002	<0.050	<0.002	<0.002	0.003(1)	<0.001	<0.002
Zinc	mg/l	-	5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc, filtered	mg/l	-	5.0	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

FIGURES



LEGEND

▲ DENOTES MONITORING WELL
M.W. 108S

— DENOTES PROPERTY LINE

NL/TARACORP SUPERFUND SITE PDFI
GRANITE CITY, ILLINOIS
U.S. ARMY CORPS OF ENGINEERS

PROJECT NO.
C3M11Q

**Woodward-Clyde
Consultants**

Engineering & sciences applied to the earth & its environment

DRN. BY: kdw 11/11/93
DSGN. BY:
CHKD. BY: DCP n/93

Main Industrial Property
Site Plan

FIG. NO.
1

Woodward-Clyde

ATTACHMENT 1



✓MAM
7-11-95

METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3m11Q1
LABORATORY ENVIRONMETRICS
LAB PROJECT NO. 321.55
NO. OF SAMPLES/
MATRIX 13 / WATER

SITE NL/TARACORP

REVIEWER Woodward-Clyde Consultants
REVIEWER'S NAME WENDY RETNGDIT
COMPLETION DATE 7/11/95

DATA ASSESSMENT WORKSHEET

	6010 Meth # ICP/AA	METALS Meth # GF/AA	Meth #	Meth #	Meth #
1. HOLDING TIMES	✓	✓	—	—	—
2. BLANKS	(1)	(2)	—	—	—
3. SCS	✓	✓	—	—	—
4. DCS	NA	NA	—	—	—
5. DILUTION	✓	✓	—	—	—
6. OTHER QC ms/msD	✓	(3)	—	—	—
7. OVERALL ASSESSMENT	O	OK	—	—	—

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ZINC WAS DETECTED IN THE PREPARATION BLANK. ALL RESULTS GREATER THAN DETECTION LIMIT BUT LESS THAN 5 X BLANK VALUE ARE QUALIFIED AS NON-DETECT (U).

(2) ANTIMONY AND SELENIUM WERE DETECTED IN THE PREPARATION BLANK. ALL RESULTS GREATER THAN DETECTION LIMIT BUT LESS THAN 5X BLANK VALUE ARE QUALIFIED AS NON-DETECT (U).

COMMENTS: (3) SELENIUM % RECOVERY FOR MS/MSD ANALYSIS FALLS OUTSIDE CONTROL LIMITS. ALL SELENIUM ANALYSIS ARE NON-DETECT (INCLUDING SAMPLES QUALIFIED NON-DETECT BY PREPARATION BLANK CONTAMINATION). DATA NOT ACCEPTED. NO ACTION NECESSARY. ANTIMONY RECOVERY IS SLIGHTLY OUT OF CONTROL LIMITS. NO ACTION.

(4) ALL ARSENIC VALUES WERE QUALIFIED AS "B" BY THE LABORATORY BASED ON INFORMATION NOT REVIEWED BY WCC. ARSENIC VALUES WERE MARKED WITH "NON-DETECT" (U) TO EQUALIZE THE TWO VALIDATING/REVIEWING CLASSIFICATIONS.

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW109-10GGW
LAB ID: 9506000321-001
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:08

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00240 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.00120 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0004 mg/L	06/30/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW109920GGW
LAB ID: 9506000321-002
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:09

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00120 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0004 mg/L	06/30/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.D.
Laboratory Director

— Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

— ATTN: Eric Page

— INVOICE: 32655

PO: ---

— PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

— SAMPLE ID: WMMW110-10GGW
LAB ID: 9506000321-003
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:09

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00130 mg/L B U	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0004 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	0.0210 mg/L U	06/23/95 R.D.

— B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper PhD
Laboratory Director

ENVIRONMETRICS

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: ERIC PAGE

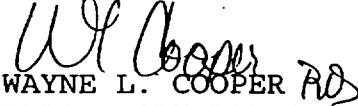
INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

QUALITY ASSURANCE QUALITY CONTROL REPORT**MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA
(UNITS - mg/kg)**

SAMPLE ID: WMW110-10GGW
LAB ID: 9506/321-003
DATE COLLECTED: 6/16/95
DATE RECEIVED: 6/16/95 16:09

<u>ELEMENT</u>	<u>SAMPLE RESULT (mg/kg)</u>	<u>SPIKE LEVEL (mg/kg)</u>	<u>SPIKE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>DUPLICATE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>RPD</u>
BERYLLIUM	<0.005	0.100	0.093	93	0.095	95	2
CADMIUM	<0.005	0.100	0.093	93	0.095	95	2
CHROMIUM	<0.010	0.400	0.374	94	0.381	95	1
COPPER	<0.025	0.500	0.478	96	0.492	98	2
MERCURY	<0.0002	0.0020	0.0022	108	0.0021	106	2
NICKEL	<0.040	1.000	0.940	94	0.957	96	2
SILVER	<0.010	0.100	0.100	100	0.100	100	0
ZINC	0.021	1.000	0.956	94	0.959	94	0

JULY 22, 1994


WAYNE L. COOPER, R.D.
LABORATORY DIRECTOR

ENVIRONMETRICS

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

QUALITY ASSURANCE QUALITY CONTROL REPORT**MATRIX SPIKE/MATRIX SPIKE DUPLICATE
GRAPHITE FURNACE ATOMIC ABSORPTION
(UNITS - mg/kg)**

SAMPLE ID: WMW110-10GGW
LAB ID: 9506/321-003
DATE COLLECTED: 6/16/95
DATE RECEIVED: 6/16/95 16:09

<u>ELEMENT</u>	<u>SAMPLE RESULT (mg/kg)</u>	<u>SPIKE LEVEL (mg/kg)</u>	<u>SPIKE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>DUPLICATE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>RPD</u>
ANTIMONY	<0.0012	0.100	0.0996	99.6	0.0997	99.7	0
ARSENIC	0.0013	0.040	0.0362	87	0.0372	90	3
LEAD	<0.0009	0.020	0.0184	92	0.0185	92	1
SELENIUM	<0.0004	0.010	0.0142	142	0.0141	141	1
THALLIUM	<0.001	0.050	0.0424	85	0.0420	84	1

JULY 5, 1994


WAYNE L. COOPER 
LABORATORY DIRECTOR

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGWF
LAB ID: 9506000321-004
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:19

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	0.00130 mg/L B	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00630 mg/L B	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00120 mg/L B	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	0.0210 mg/L B	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00250 mg/L B	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00200 mg/L B	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0110 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	0.0350 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.0172 mg/L	06/27/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper PWS
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGW
LAB ID: 9506000321-004
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:10

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0610 mg/L <i>W</i>	06/23/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995

WL Cooper *WLC*
Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW107-DOGGWDF

LAB ID: 9506000321-005

DATE COLLECTED: 06/16/95

DATE RECEIVED: 06/16/95 16:20

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	0.00130 mg/L BU	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00270 mg/L BU	07/01/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/24/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/26/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	0.0220 mg/L BU	06/27/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00180 mg/L BU	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.0102 mg/L	07/01/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0140 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	0.0320 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.0280 mg/L	06/28/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/26/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.010 mg/L	06/29/95 D.S.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655
PO: ---
PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM107-DOGGWD
LAB ID: 9506000321-005
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:37

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0500 mg/L μ	06/27/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

QUALITY ASSURANCE QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/kg)

SAMPLE ID: WMW107-DOGGWDF
LAB ID: 9506/321-005
DATE COLLECTED: 6/16/95
DATE RECEIVED: 6/16/95 16:20

<u>ELEMENT</u>	<u>SAMPLE RESULT (mg/kg)</u>	<u>SPIKE LEVEL (mg/kg)</u>	<u>SPIKE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>DUPLICATE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>RPD</u>
ANTIMONY	0.0018	0.100	0.0766	77	0.0696	70	7
ARSENIC	0.0102	0.040	0.0531	107	0.0596	123	16
LEAD	0.0280	0.020	0.0507	114	0.0483	102	5
SELENIUM	<0.0008	0.010	0.0071	71	0.0061	61	15
THALLIUM	<0.0010	0.050	0.0402	80	0.0382	76	5

JULY 5, 1994


WAYNE L. COOPER *RLS*
LABORATORY DIRECTOR

ENVIRONMETRICS

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

QUALITY ASSURANCE QUALITY CONTROL REPORT**MATRIX SPIKE/MATRIX SPIKE DUPLICATE
ICP/AA
(UNITS - mg/kg)**

SAMPLE ID: WMMW107-DOGGWDF
LAB ID: 9506/321-005
DATE COLLECTED: 6/16/95
DATE RECEIVED: 6/16/95 16:20

<u>ELEMENT</u>	<u>SAMPLE RESULT (mg/kg)</u>	<u>SPIKE LEVEL (mg/kg)</u>	<u>SPIKE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>DUPLICATE RESULT (mg/kg)</u>	<u>% REC.</u>	<u>RPD</u>
BERYLLIUM	<0.005	0.100	0.091	91	0.092	92	1
CADMIUM	<0.005	0.100	0.089	89	0.087	87	2
CHROMIUM	0.014	0.400	0.374	90	0.374	90	0
COPPER	0.032	0.500	0.496	93	0.489	91	2
MERCURY	<0.0002	0.0020	0.0022	108	0.0021	105	3
NICKEL	<0.040	1.000	0.945	94	0.950	95	1
SILVER	<0.010	0.100	0.089	89	0.090	90	1
ZINC	0.050	1.000	0.947	90	0.954	90	0

JULY 22, 1994


WAYNE L. COOPER
LABORATORY DIRECTOR

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, MO. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW108-SOOGWF

LAB ID: 9506000321-006

DATE COLLECTED: 06/16/95

DATE RECEIVED: 06/16/95 16:41

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00120 mg/L BU	06/30/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	0.616 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/24/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	0.151 mg/L	06/26/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	0.00590 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	0.388 mg/L	06/27/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00280 mg/L BU	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.0892 mg/L	07/01/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.695 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0910 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	0.141 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 6010A	0.730 mg/L	6/23/95 R.D.
TOTAL MERCURY	SW-846 7470A	0.0004 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	0.284 mg/L	06/26/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	0.0464 mg/L	07/01/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32655

PO: ---

PROJECT NO: C3M11Q N/L TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW108-SOGGW
LAB ID: 9506000321-006
DATE COLLECTED: 06/16/95
DATE RECEIVED: 06/16/95 16:39

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	1.01 mg/L	06/27/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

PREPARATION BLANK
ICP/AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>RESULT</u>
BERYLLIUM	<0.005
CADMIUM	<0.005
CHROMIUM	<0.010
COPPER	<0.025
LEAD	<0.100
MERCURY	<0.0002
SILVER	<0.010
ZINC	0.021

LABORATORY CONTROL SAMPLE
ICP\AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
BERYLLIUM	0.50	0.455	91
CADMIUM	0.50	0.454	91
CHROMIUM	0.50	0.469	94
COPPER	0.50	0.469	94
LEAD	0.50	0.428	86
MERCURY	0.002	0.0020	100
SILVER	0.50	0.426	85
ZINC	0.50	0.464	93

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32655
PROJECT # C3M11Q1, NL/TARACORP

PREPARATION BLANK

GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

<u>ELEMENT</u>	<u>RESULT</u>
ANTIMONY	0.0057
ARSENIC	<0.0004
LEAD	<0.0009
SELENIUM	0.0012
THALLIUM	<0.0010

LABORATORY CONTROL SAMPLE

GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
ANTIMONY	0.100	0.1025	102.5
ARSENIC	0.050	0.0490	98
LEAD	0.020	0.0192	96
SELENIUM	0.025	0.0201	80
THALLIUM	0.050	0.0512	103

JULY 5, 1995


WAYNE L. COOPER *WLC*
LABORATORY DIRECTOR

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

coC : 010204
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000321-001-01	WMW109-10GGW	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-002-01	WMW109920GGW	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-003-01	WMW110-10GGW	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
MATRIX SPIKE 9506000321-003-02	WMW110-10GGWM	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 2

coc : 010204
 Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000321-003-02	WMW110-10GGWM	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		ZINC-SW-846 6010A
MATRIX SPIKE DUPLICATE 9506000321-003-03	WMW110-10GGWX	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-004-01	WMW107-DOGGW	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-004-02	WMW107-DOGGWF	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A
9506000321-005-01	WMW107-DOGGWDF	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 3

COC : 010204

Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000321-005-01	WMW107-DOGGWDF	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A
9506000321-005-02	WMW107-DOGGWD	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
MATRIX SPIKE 9506000321-005-03	WMW107-DOGGWM	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
MATRIX SPIKE DUPLICATE 9506000321-005-04	WMW107-DOGGWX	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-006-01	WMW108-SOGGW	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 4

coc : 010204
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP

Date Due (Client): 06/30/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date</u>		
					<u>Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000321-006-01	WMW108-SOGGW	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000321-006-02	WMW108-SOGGWF	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/16/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A

Sample Instructions:

Items Transferred 13 Relinquished By Date 06/16/95 PM Signature: Anne Morris
Client Services Rep.
Anne Morris *EC* Logged In By Phyllis Woods
Login Coordinator Date 06/16/95 Time 16:41:22

CHAIN OF CUSTODY RECORD

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

SHEET 1 of 2

PROJECT NO:	PROJECT NAME:	NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED				REMARKS
			METHODS 1+ POLY HINDS				
C3n11Q	NL/TARSCORP						
SAMPLER'S: (Signature) <i>W. Rabolt</i>							
DATE	TIME	SAMPLE I.D. NUMBER					
6/16/95	1010	WMW109-10GGW	1	1			
	1045	WMW109920GGW	1	1			
	1125	WMW110-10GGW	1	1			
	1125	WMW110-10GGWm → (ms.)	1	1			
	1125	WMW110-10GGWX → (msd)	1	1			
	1310	WMW107-DOGGW	1	1			
	1310	WMW107-DOGGWF	1	1			
	1310	WMW107-DOGGWD	1	1			
	1310	WMW107-DOGA WDF	1	1			
	1310	WMW107-DOGGWM (ms)	1	1			
RELINQUISHED BY: (Signature) <i>Wendy E. Rabolt</i>		DATE / TIME 6/16 3:35	RECEIVED BY: (Signature) <i>El. J. H.</i>			DATE / TIME 6/16 3:25	
RELINQUISHED BY: (Signature)		DATE / TIME 6-16-345	RECEIVED AT LAB BY: (Signature)			DATE / TIME 6-16-95-345	
METHOD OF SHIPMENT:			AIRBILL NO:				

CHAIN OF CUSTODY RECORDSHEET 2 of —

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

PROJECT NO:		PROJECT NAME:		NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED					REMARKS		
CBM11Q		NL/TACCORD			METALS	PCP	Hg	As	Cr		Pb	
SAMPLER'S: (Signature)		<i>Wendy Rambolt</i>										
DATE	TIME	SAMPLE I.D. NUMBER										
6/16/95	1310	WMW107-DOGGWX (msd)		1	1							
	1400	WMW108-SOGGW		1	1							
↓	1400	WMW108 - SOGGWF		1	1							
RELINQUISHED BY: (Signature)				DATE / TIME	<i>6-16-95</i>					RECEIVED BY: (Signature)		
<i>Wendy Rambolt</i>										<i>CJ</i>		
RELINQUISHED BY: (Signature)				DATE / TIME	<i>6-16-95</i>					RECEIVED AT LAB BY: (Signature)		
METHOD OF SHIPMENT:						AIRBILL NO:						

coc : 010204
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

Date Received: 06/16/95

Date Logged: 06/16/95

Status: Normal/LEVEL 5

Date Due (PM): 06/28/95 Proj #: C3M11Q N/L TARACORP
Date Due (Client): 06/30/95 P.O. #:
Mode: Mail Quot #:

✓ MAM
7-11-95

METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1
LABORATORY ENVIROMETRICS
LAB PROJECT NO. 82656
NO. OF SAMPLES/
MATRIX 13 / WATER

SITE NL / TARACORP
REVIEWER Woodward-Clyde Consultants
REVIEWER'S NAME WENDY REINBOLD
COMPLETION DATE 07/10/95

DATA ASSESSMENT WORKSHEET

	<u>6010</u> Meth # ICP/AA	<u>METALS</u> Meth # GFI/AA	Meth #	Meth #	Meth #
1. HOLDING TIMES	<u>✓</u>	<u>✓</u>	—	—	—
2. BLANKS	<u>✓</u>	<u>(1)</u>	—	—	—
3. SCS	<u>✓</u>	<u>✓</u>	—	—	—
4. DCS	<u>NA</u>	<u>NA</u>	—	—	—
5. DILUTION	<u>✓</u>	<u>✓</u>	—	—	—
6. OTHER QC	<u>NA</u>	<u>NA</u>	—	—	—
7. OVERALL ASSESSMENT	<u>O</u>	<u>O</u>	—	—	—

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ANTIMONY AND SELENIUM DETECTED IN THE METHOD BLANK. ANALYTICAL RESULTS LESS THAN 5X THE BLANK RESULT ARE QUANTIFIED AS NON-DETECT (N). LAB HAS ALREADY QUANTIFIED THESE AS "B" FOR ARSENIC AND ANTIMONY BECAUSE THE RESULT WAS GREATER THAN THE METHOD DETECTION LIMIT BUT LESS THAN THE PRACTICAL QUANTIFICATION LIMIT. WCC MARKED THESE AS NON-DETECT (N).

COMMENTS: _____

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW105-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-001

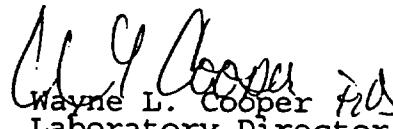
DATE COLLECTED: 06/15/95 09:40

DATE RECEIVED: 06/15/95 16:08

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
- DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00130 mg/L BU	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
- DISSOLVED LEAD	SW-846 7421	0.00480 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
- DISSOLVED SELENIUM	SW-846 7740	0.00380 mg/L BU	06/30/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.
- TOTAL ANTIMONY	SW-846 7041	0.00520 mg/L BU	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00140 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
- TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
- TOTAL LEAD	SW-846 7421	0.0128 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00500 mg/L BU	06/30/95 D.S.
- TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	0.00120 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM105-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-001

DATE COLLECTED: 06/15/95 09:40

DATE RECEIVED: 06/15/95 16:08

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0250 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

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ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM106-S-0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-002

DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:10

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00110 mg/L Bu	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	0.00250 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00780 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00420 mg/L Bu	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00670 mg/L Bu	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0190 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.177 mg/L	06/28/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00610 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper P.E.
Laboratory Director

- Woodward-Clyde Consultants
- 2318 Millpark Drive
Maryland Heights, Mo. 63043

- ATTN: Eric Page

- INVOICE: 32656

PO: ---

- PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

- SAMPLE ID: WMM106-S-0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-002

DATE COLLECTED: 06/15/95 10:25

- DATE RECEIVED: 06/15/95 16:10

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0820 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper RL
Laboratory Director

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2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656
PO: ---
PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
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ANALYSIS RESULTS

SAMPLE ID: WMM106-DOGGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-003

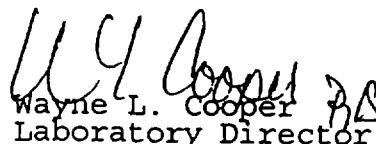
DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:11

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00170 mg/L BU	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00980 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00180 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00890 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

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2318 Millpark Drive
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ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMMW106-DOGGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-003

DATE COLLECTED: 06/15/95 10:25

DATE RECEIVED: 06/15/95 16:11

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, PhD
Laboratory Director

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2318 Millpark Drive
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ATTN: Eric Page

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PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
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ANALYSIS RESULTS

SAMPLE ID: WMM107-SOGGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-004

DATE COLLECTED: 06/15/95 11:35

DATE RECEIVED: 06/15/95 16:12

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00190 mg/L Bu	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00660 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00150 mg/L Bu	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00530 mg/L Bu	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0450 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	0.0350 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.0247 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	0.0002000 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	0.0670 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00610 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656

PO: ---

PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM107-S0GGW / SOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED
METALS

LAB ID: 9506000291-004

DATE COLLECTED: 06/15/95 11:35

DATE RECEIVED: 06/15/95 16:12

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.149 mg/L	06/23/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, PLS
Laboratory Director

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Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656
PO: ---
PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
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(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW112-10GGWB
LAB ID: 9506000291-005
DATE COLLECTED: 06/15/95 11:40
DATE RECEIVED: 06/15/95 16:13

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	<0.0004 mg/L	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.0009 mg/L <i>u</i>	06/30/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

July 5, 1995

Woodward-Clyde Consultants
2318 Millpark Drive
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ATTN: Eric Page

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PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
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ANALYSIS RESULTS

SAMPLE ID: WMM108-D0GGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-006

DATE COLLECTED: 06/15/95 13:25

DATE RECEIVED: 06/15/95 16:15

TEST PERFORMED	METHOD OF ANALYSIS	RESULTS	ANALYST
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00280 mg/L BU	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	0.120 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	2.30 mg/L	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00320 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	0.0460 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.00110 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	0.137 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656
PO: ---
PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW108-D0GGW / DOGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-006

DATE COLLECTED: 06/15/95 13:25

DATE RECEIVED: 06/15/95 16:15

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	4.78 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, P.E.
Laboratory Director

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2318 Millpark Drive
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PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
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(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM10492OGGW / OGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-007

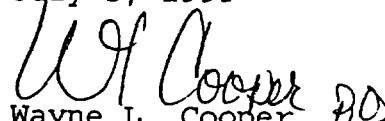
DATE COLLECTED: 06/15/95 14:10

DATE RECEIVED: 06/15/95 16:16

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00130 mg/L BU	06/29/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
DISSOLVED LEAD	SW-846 7421	0.00140 mg/L	06/23/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	06/23/95 J.N.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00220 mg/L BU	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00210 mg/L BU	06/29/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.186 mg/L	06/23/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0008 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, PhD
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32656
PO: ---
PROJECT NO: C2M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

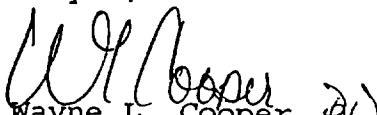
SAMPLE ID: WMW10492OGGW / OGGWF 1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

LAB ID: 9506000291-007
DATE COLLECTED: 06/15/95 14:10
DATE RECEIVED: 06/15/95 16:16

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper AD
Laboratory Director

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32656
PROJECT # C2M11Q1, NL/TARACORP

PREPARATION BLANK

GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

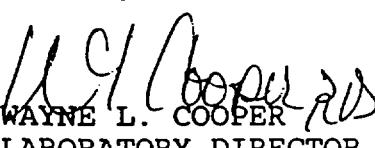
<u>ELEMENT</u>	<u>RESULT</u>
ANTIMONY	0.0057
ARSENIC	<0.0004
LEAD	<0.0009
SELENIUM	0.0012
THALLIUM	<0.0010

LABORATORY CONTROL SAMPLE

GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
ANTIMONY	0.100	0.1025	102.5
ARSENIC	0.050	0.0490	98
LEAD	0.020	0.0192	96
SELENIUM	0.025	0.0201	80
THALLIUM	0.050	0.0512	103

JULY 5, 1995


WAYNE L. COOPER, PhD
LABORATORY DIRECTOR

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: ERIC PAGE

INVOICE # 32656
PROJECT # C2M11Q1, NL/TARACORP

PREPARATION BLANK
ICP/AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>RESULT</u>
BERYLLIUM	<0.005
CADMIUM	<0.005
CHROMIUM	<0.010
COPPER	<0.025
MERCURY	<0.0002
NICKEL	<0.040
SILVER	<0.010
ZINC	<0.020

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
BERYLLIUM	0.50	0.465	93
CADMIUM	0.50	0.472	94
CHROMIUM	0.50	0.482	96
COPPER	0.50	0.472	94
MERCURY	0.002	0.0020	100
NICKEL	0.50	0.475	95
SILVER	0.50	0.477	95
ZINC	0.50	0.467	93

CHAIN OF CUSTODY RECORD

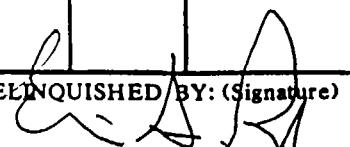
SHEET 1 of 2

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

PROJECT NO:	PROJECT NAME:	CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED		REMARKS
			NO. OF		
C3m11Q1	NL / Tazacor?				
SAMPLER'S: (Signature)					
DATE	TIME	SAMPLE I.D. NUMBER	X		
6/15	940	WMW105-SOGGW	1	X	
	940	WMW105-SOGGW	1	X	
1025	WmW106-SOGGW	1	X		
1025	WmW106-SOGGW	1	X		
1100	WmW106-WOGGW	1	X		
1100	WmW106-WOGGW	1	X		
1135	WmW107-SOGGW	1	X		
1135	WmW107-SOGGW	1	X		
1140	WmW112-10GGWB	1	X		
1140	WmW112-10GGWB	1	X		
RELINQUISHED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME		
<i>E.S.</i>	6/15 1520	<i>P Woods</i>	6/15 1520		
RELINQUISHED BY: (Signature)	DATE / TIME	RECEIVED AT LAB BY: (Signature)	DATE / TIME		
METHOD OF SHIPMENT:	AIRBILL NO:				

CHAIN OF CUSTODY RECORDSHEET 2 of 2

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

PROJECT NO:		PROJECT NAME:		NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED				REMARKS
C3M11Q1		NL / Forecast			1	1	1	1	
SAMPLER'S: (Signature)					P	H	F	R	
DATE	TIME	SAMPLE I.D. NUMBER			Mechanical	Chemical	Filter	Residue	
6/15/95	1325	WMW108-1D/0661W		1	X				
	1325	WMW108-1D066WF		1		X			
	1410	WMW1049Z066W		1	X				
	1410	WMW1049Z066WF		1		X			
RELINQUISHED BY: (Signature)		DATE / TIME		RECEIVED BY: (Signature)				DATE / TIME	
		6/15 1520		P Woods				6/15/95 1520	
RELINQUISHED BY: (Signature)		DATE / TIME		RECEIVED AT LAB BY: (Signature)				DATE / TIME	
METHOD OF SHIPMENT:				AIRBILL NO:					

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

COC : 010191

Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date</u>	<u>Collected</u>	<u>Temp</u>	<u>Tests</u>		
1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS 9506000291-001-01	WMW105-SOGGW / SOGGWF	GROUND WATER	2-1 LITER PLASTIC	Nitric Acid	06/15/95	TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A				
1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS 9506000291-002-01	WMW106-S-0GGW / SOGGWF	GROUND WATER	2-1 LITER PLASTIC	Nitric Acid	06/15/95	TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A				

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 2

COC : 010191
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/15/95
Date Logged: 06/15/95
Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP
Date Due (Client): 06/29/95 P.O. #:
Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date</u>	<u>Collected Temp</u>	<u>Tests</u>
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Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS
9506000291-003-01 WMW106-D0GGW / DOGGWF GROUND WATER 2-1 LITER PLASTIC Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041
TOTAL ARSENIC-SW-846 7060
LEAD-SW-846 7421
SELENIUM-SW-846 7740
THALLIUM-SW-846 7841
CADMIUM-SW-846 6010A
CHROMIUM-SW-846 6010A
SILVER-SW-846 6010A
MERCURY-SW-846 7470A
NICKEL-SW-846 6010A
COPPER-SW-846 6010A
TOTAL BERYLLIUM-SW-846 6010A
ZINC-SW-846 6010A
DISSOLVED ANTIMONY-SW-846 7041
DISSOLVED ARSENIC-SW-846 7060
DISSOLVED BERYLLIUM-SW-846 6010A
Diss. CADMIUM-SW-846 6010A
Diss. CHROMIUM-SW-846 6010A
Diss. COPPER-SW-846 6010A
Diss. LEAD-SW-846 7421
Diss. MERCURY-SW-846 7470
Diss. NICKEL-SW-846 6010A
Diss. SELENIUM-SW-846 7740
Diss. SILVER-SW-846 6010A
Diss. THALLIUM-SW-846 7841
Diss. ZINC-SW-846 6010A

Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS
9506000291-004-01 WMW107-S0GGW / SOGGWF GROUND WATER 2-1 LITER PLASTIC Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041
TOTAL ARSENIC-SW-846 7060
LEAD-SW-846 7421
SELENIUM-SW-846 7740
THALLIUM-SW-846 7841
CADMIUM-SW-846 6010A
CHROMIUM-SW-846 6010A
SILVER-SW-846 6010A
MERCURY-SW-846 7470A
NICKEL-SW-846 6010A
COPPER-SW-846 6010A
TOTAL BERYLLIUM-SW-846 6010A
ZINC-SW-846 6010A
DISSOLVED ANTIMONY-SW-846 7041
DISSOLVED ARSENIC-SW-846 7060
DISSOLVED BERYLLIUM-SW-846 6010A
Diss. CADMIUM-SW-846 6010A
Diss. CHROMIUM-SW-846 6010A
Diss. COPPER-SW-846 6010A
Diss. LEAD-SW-846 7421
Diss. MERCURY-SW-846 7470
Diss. NICKEL-SW-846 6010A
Diss. SELENIUM-SW-846 7740
Diss. SILVER-SW-846 6010A
Diss. THALLIUM-SW-846 7841

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 3

COC : 010191

Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

Sample Id. No.	Client Sample Name/Number	Matrix	Container	Preservative	Date		
					Collected	Temp	Tests
9506000291-004-01	WMW107-S0GGWF / SOGGWF	GROUND WATER	2-1 LITER PLASTIC	Nitric Acid	06/15/95	Diss. ZINC-SW-846 6010A	
9506000291-005-01	WMW112-I0GGWB	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/15/95	TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A	

Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

9506000291-006-01 WMW108-D0GGW / DOGGWF

GROUND WATER 2-1 LITER PLASTIC

Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041
TOTAL ARSENIC-SW-846 7060
LEAD-SW-846 7421
SELENIUM-SW-846 7740
THALLIUM-SW-846 7841
CADMIUM-SW-846 6010A
CHROMIUM-SW-846 6010A
SILVER-SW-846 6010A
MERCURY-SW-846 7470A
NICKEL-SW-846 6010A
COPPER-SW-846 6010A
TOTAL BERYLLIUM-SW-846 6010A
ZINC-SW-846 6010A
DISSOLVED ANTIMONY-SW-846 7041
DISSOLVED ARSENIC-SW-846 7060
DISSOLVED BERYLLIUM-SW-846 6010A
Diss. CADMIUM-SW-846 6010A
Diss. CHROMIUM-SW-846 6010A
Diss. COPPER-SW-846 6010A
Diss. LEAD-SW-846 7421
Diss. MERCURY-SW-846 7470
Diss. NICKEL-SW-846 6010A
Diss. SELENIUM-SW-846 7740
Diss. SILVER-SW-846 6010A
Diss. THALLIUM-SW-846 7841
Diss. ZINC-SW-846 6010A

Sample Instructions:

1 BOTTLE FIELD FILTERED FOR DISSOLVED METALS

9506000291-007-01 WMW10492OGGW / OGGWF

GROUND WATER 2-1 LITER PLASTIC

Nitric Acid 06/15/95

TOTAL ANTIMONY-SW-846 7041
TOTAL ARSENIC-SW-846 7060
LEAD-SW-846 7421
SELENIUM-SW-846 7740
THALLIUM-SW-846 7841
CADMIUM-SW-846 6010A
CHROMIUM-SW-846 6010A
SILVER-SW-846 6010A
MERCURY-SW-846 7470A
NICKEL-SW-846 6010A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 4

COC : 010191
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

Date Received: 06/15/95
Date Logged: 06/15/95
Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP
Date Due (Client): 06/29/95 P.O. #:
Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000291-007-01	WMW10492OGGW / OGGWF	GROUND WATER	2-LITER PLASTIC	Nitric Acid	06/15/95		COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A

Sample Instructions:

<u>Items Transferred</u>	<u>Relinquished By</u>	<u>Date</u>	<u>Logged In By</u>	<u>Date</u>	<u>Time</u>
7		06/15/95 PM Signature :	Anne Morris Client Services Rep.	Phyllis Woods Login Coordinator	06/15/95 16:16:46

coc : 010191
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

Date Received: 06/15/95

Date Logged: 06/15/95

Status: Normal/LEVEL 5

Date Due (PM): 06/27/95 Proj #: C2M11Q1 NL/TARACORP

Date Due (Client): 06/29/95 P.O. #:

Mode: Mail Quot #:

✓ MAM
7-11-95

METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1
LABORATORY ENVIRONMETRICS
LAB PROJECT NO. 32654
NO. OF SAMPLES/
MATRIX 2/WATER

SITE NL/TARACORP
REVIEWER Woodward-Clyde Consultants
REVIEWER'S NAME WENDY REINHOLDT
COMPLETION DATE 07/10/95

DATA ASSESSMENT WORKSHEET

	Meth # <u>6010</u> <u>ICPIAA</u> <u>✓</u>	Meth # <u>METALS</u> <u>GFIAA</u> <u>✓</u>	Meth # —	Meth # —	Meth # —
1. HOLDING TIMES			—	—	—
2. BLANKS	<u>✓</u>	<u>(1)</u>	—	—	—
3. SCS	<u>✓</u>	<u>✓</u>	—	—	—
4. DCS	<u>NA</u>	<u>NA</u>	—	—	—
5. DILUTION	<u>✓</u>	<u>✓</u>	—	—	—
6. OTHER QC	<u>NA</u>	<u>NA</u>	—	—	—
7. OVERALL ASSESSMENT	<u>O</u>	<u>O</u>	—	—	—

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: _____

COMMENTS(1) Total Arsenic values were above method detection limits
but below practical quantitation limits. Data qualified as non-detect (u)
by Lab and WCC. Antimony & Selenium were detected in the method blank.
Samples were non-detect for Antimony and Selenium. Data not affected.
No action necessary.

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32654

PO: ---

PROJECT NO: C3M11Q1 NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM111920GGW
LAB ID: 9506000367-001
DATE COLLECTED: 06/20/95
DATE RECEIVED: 06/20/95 15:28

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00120 mg/L BU	06/30/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	0.0009 mg/L	06/24/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0004 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.001 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	<0.020 mg/L	06/23/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

July 5, 1995

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32654

PO: ---

PROJECT NO: C3M11Q1 NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW111920GGWD

LAB ID: 9506000367-002

DATE COLLECTED: 06/20/95

DATE RECEIVED: 06/20/95 15:28

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	06/29/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00110 mg/L BU	06/30/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	06/23/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	06/23/95 R.D.
TOTAL LEAD	SW-846 7421	<0.0009 mg/L	06/24/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	06/23/95 J.N.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	06/23/95 R.D.
TOTAL SELENIUM	SW-846 7740	<0.0004 mg/L	07/03/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	06/23/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	06/29/95 D.S.
TOTAL ZINC	SW-846 6010A	0.0300 mg/L	06/23/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

July 5, 1995


Wayne L. Cooper, Ph.D.
Laboratory Director

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32654
PROJECT # C3M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

PREPARATION BLANK
ICP/AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>RESULT</u>
BERYLLIUM	<0.005
CADMIUM	<0.005
CHROMIUM	<0.010
COPPER	<0.025
MERCURY	<0.0002
NICKEL	<0.040
SILVER	<0.010
ZINC	<0.020

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
BERYLLIUM	0.50	0.465	93
CADMIUM	0.50	0.472	94
CHROMIUM	0.50	0.482	96
COPPER	0.50	0.472	94
MERCURY	0.002	0.0020	100
NICKEL	0.50	0.475	95
SILVER	0.50	0.477	95
ZINC	0.50	0.467	93

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32654
PROJECT # C3M11Q1, NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

PREPARATION BLANK

GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

<u>ELEMENT</u>	<u>RESULT</u>
ANTIMONY	0.0057
ARSENIC	<0.0004
LEAD	<0.0009
SELENIUM	0.0012
THALLIUM	<0.0010

LABORATORY CONTROL SAMPLE

GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS - mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
ANTIMONY	0.100	0.1025	102.5
ARSENIC	0.050	0.0490	98
LEAD	0.020	0.0192	96
SELENIUM	0.025	0.0201	80
THALLIUM	0.050	0.0512	103

JULY 5, 1995


WAYNE L. COOPER, PLS
LABORATORY DIRECTOR

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

cc : 010227
 Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Eric Page

Date Received: 06/20/95
 Date Logged: 06/20/95
 Status: Normal/LEVEL 5

Date Due (PM): 06/30/95 Proj #: C3M11Q1 NL/TARACORP
 Date Due (Client): 07/05/95 P.O. #:
 Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
1506000367-001-01	WMW111920GGW	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/20/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
1506000367-002-01	WMW111920GGWD	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/20/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A

Sample Instructions:

<u>Items Transferred</u>	<u>Relinquished By</u>	<u>Date</u>	<u>Logged In By</u>	<u>Date</u>	<u>Time</u>
2		06/20/95 PM Signature :	Anne Morris Client Services Rep. <i>Anne Morris</i>	Phyllis Woods Login Coordinator	06/20/95 15:28:35

COC : 010227

**Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page**

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

Date Received: 06/20/9

Date Logged: 06/20/95

status: Normal/LEVEL 5

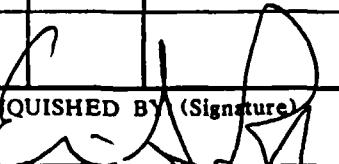
Date Due (PM): 06/30/95 Proj #: C3M11Q1 NUTARACORP

Date Due (Client): 07/05/95 P.O. #:

Mode: Mail Quot #:

CHAIN OF CUSTODY RECORDSHEET 1 of 1

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

PROJECT NO:		PROJECT NAME:		NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED					REMARKS
13M1101		NL / Tapacorp				1L Poly	metals	HMBs	reserved	
SAMPLE I.D. NUMBER		DATE	TIME							
WMW111920G(LW)		6/20	950	1	X					
WMW111920GG(WJ)		"	950	1	X					
RELINQUISHED BY: (Signature)				DATE / TIME	RECEIVED BY: (Signature)				DATE / TIME	
				6/20/95 1145					6/20 1145	
RELINQUISHED BY: (Signature)				DATE / TIME	RECEIVED AT LAB BY: (Signature)				DATE / TIME	
METHOD OF SHIPMENT:					AIRBILL NO:					

V MAM
7-11-95

METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3M11Q1
LABORATORY ENVIRONMETRICS
LAB PROJECT NO. 32560
NO. OF SAMPLES/
MATRIX 31 WATER

SITE NL/TARACORP
REVIEWER Woodward-Clyde Consultants
REVIEWER'S NAME Wendy Rednbolt
COMPLETION DATE 07/10/95

DATA ASSESSMENT WORKSHEET

	<u>GO/NO Meth #</u>	<u>METALS Meth #</u>	<u>Meth #</u>	<u>Meth #</u>	<u>Meth #</u>
1. HOLDING TIMES	<u>✓</u>	<u>✓</u>	—	—	—
2. BLANKS	<u>✓</u>	<u>(1)</u>	—	—	—
3. SCS	<u>✓</u>	<u>✓</u>	—	—	—
4. DCS	<u>NA</u>	<u>NA</u>	—	—	—
5. DILUTION	<u>✓</u>	<u>✓</u>	—	—	—
6. OTHER QC	<u>NA</u>	<u>NA</u>	—	—	—
7. OVERALL ASSESSMENT	<u>O</u>	<u>O</u>	—	—	—

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) ANTIMONY AND LEAD ARE DETECTED IN THE METHOD BLANK ANALYTICAL RESULTS WERE QUALIFIED AS NON-DETECT (U) IF RESULT WAS GREATER THAN THE DETECTION LIMIT BUT LESS THAN 5X THE BLANK RESULT. THE LAB ALSO QUALIFIED SOME SAMPLE RESULTS THAT WERE GREATER THAN THE METHOD DETECTION LIMIT BUT LESS THAN THE PRACTICAL QUANTIFICATION LIMIT. THE LAB QUALIFIED RESULTS WITH A "B".

COMMENTS:

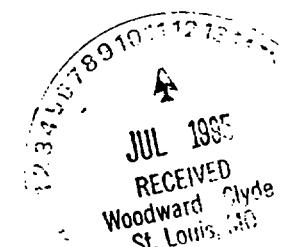
Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560
PO: ---
PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550



ANALYSIS RESULTS

SAMPLE ID: WMM10Z-1 FIELD FILTERED
LAB ID: 9506000267-001
DATE COLLECTED: 06/14/95
DATE RECEIVED: 06/14/95 16:05

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	6/18/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00120 mg/L BU	6/17/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	6/17/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	6/23/95 D.S.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00680 mg/L	6/17/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	
TOTAL ANTIMONY	SW-846 7041	<0.0012 mg/L	6/18/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.00340 mg/L BU	6/17/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
TOTAL LEAD	SW-846 7421	0.0131 mg/L	6/18/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	6/23/95 D.S.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00630 mg/L	6/17/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.

- B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995


Wayne L. Cooper, P.E.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560
PO: ---
PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW10Z-1
LAB ID: 9506000267-001
DATE COLLECTED: 06/14/95
DATE RECEIVED: 06/14/95 16:02

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0320 mg/L	6/20/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

June 26, 1995


Wayne L. Cooper, P.D.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560
PO: ---
PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM101-1 FIELD FILTERED
LAB ID: 9506000267-002
DATE COLLECTED: 06/14/95
DATE RECEIVED: 06/14/95 16:06

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	6/18/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00460 mg/L B	6/18/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	6/17/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	6/23/95 D.S.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00520 mg/L	6/17/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	6/20/95 R.D.
TOTAL ANTIMONY	SW-846 7041	<0.0014 mg/L	6/18/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.0268 mg/L	6/18/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
TOTAL LEAD	SW-846 7421	0.00300 mg/L U	6/17/95 D.S.
TOTAL MERCURY	SW-846 7470A	<0.0002 mg/L	6/23/95 D.S.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00490 mg/L	6/17/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.

B = 'Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

W.L. Cooper
Wayne L. Cooper, P.C.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560

PO: ---

PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMW101-1

LAB ID: 9506000267-002

DATE COLLECTED: 06/14/95

DATE RECEIVED: 06/14/95 16:09

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0240 mg/L	6/20/95 R.D.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995


Wayne L. Cooper, P.D.
Laboratory Director

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560
PO: ---
PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM104-1 FIELD FILTERED
LAB ID: 9506000267-003
DATE COLLECTED: 06/14/95
DATE RECEIVED: 06/14/95 16:12

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
DISSOLVED ANTIMONY	SW-846 7041	<0.0012 mg/L	6/18/95 D.S.
DISSOLVED ARSENIC	SW-846 7060	0.00310 mg/L BU	6/17/95 D.S.
DISSOLVED BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
DISSOLVED CHROMIUM	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
DISSOLVED LEAD	SW-846 7421	<0.0009 mg/L	6/17/95 D.S.
DISSOLVED MERCURY	SW-846 7470	<0.0002 mg/L	6/23/95 D.S.
DISSOLVED NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
DISSOLVED SELENIUM	SW-846 7740	0.00620 mg/L	6/17/95 D.S.
DISSOLVED SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
DISSOLVED THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.
DISSOLVED ZINC	SW-846 6010A	<0.020 mg/L	6/20/95 R.D.
TOTAL ANTIMONY	SW-846 7041	0.00340 mg/L BU	6/18/95 D.S.
TOTAL ARSENIC	SW-846 7060	0.0125 mg/L	6/17/95 D.S.
TOTAL BERYLLIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CADMIUM	SW-846 6010A	<0.005 mg/L	6/20/95 R.D.
TOTAL CHROMIUM	SW-846 6010A	0.0110 mg/L	6/20/95 R.D.
TOTAL COPPER	SW-846 6010A	<0.025 mg/L	6/20/95 R.D.
TOTAL LEAD	SW-846 7421	0.110 mg/L	6/18/95 D.S.
TOTAL MERCURY	SW-846 7470A	0.0002 mg/L	6/23/95 D.S.
TOTAL NICKEL	SW-846 6010A	<0.040 mg/L	6/20/95 R.D.
TOTAL SELENIUM	SW-846 7740	0.00540 mg/L	6/17/95 D.S.
TOTAL SILVER	SW-846 6010A	<0.010 mg/L	6/20/95 R.D.
TOTAL THALLIUM	SW-846 7841	<0.0010 mg/L	6/18/95 D.S.

B = Reported value is greater than the Method Detection Limit (MDL) but less than the Practical Quantitation Limit (PQL).

June 26, 1995

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Eric Page

INVOICE: 32560

PO: ---

PROJECT NO: C3M11Q1 NL/ TERRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WMM104-1

LAB ID: 9506000267-003

DATE COLLECTED: 06/14/95

DATE RECEIVED: 06/14/95 16:10

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ZINC	SW-846 6010A	0.0390 mg/L	6/20/95 R.D.

B = Reported value is greater than the
Method Detection Limit (MDL) but less than
the Practical Quantitation Limit (PQL).

June 26, 1995

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32560
PROJECT # C3M11Q1, NL/TARRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

PREPARATION BLANK

GRAPHITE FURNACE ATOMIC ABSORPTION (UNITS-mg/l)

<u>ELEMENT</u>	<u>BLANK RESULT</u>
ANTIMONY	0.0039
ARSENIC	<0.0004
LEAD	0.0013
SELENIUM	<0.0004
THALLIUM	<0.0007

LABORATORY CONTROL SAMPLE

GRAPHIC FURNACE ATOMIC ABSORPTION (UNITS-mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
ANTIMONY	0.100	0.1007	101
ARSENIC	0.050	0.0468	94
LEAD	0.020	0.0209	105
SELENIUM	0.025	0.0229	92
THALLIUM	0.050	0.0493	99

JUNE 22, 1995


WAYNE L. COOPER, PhD
LABORATORY DIRECTOR

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ATTN: ERIC PAGE

INVOICE # 32560
PROJECT # C3M11Q1, NL/TARRACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

PREPARATION BLANK

ICP/AA
(UNITS-mg/l)

<u>ELEMENT</u>	<u>BLANK RESULT</u>
BERYLLIUM	<0.005
CADMIUM	<0.200
CHROMIUM	<0.010
COPPER	<0.025
MERCURY	<0.0002
NICKEL	<0.040
SILVER	<0.010
ZINC	<0.020

LABORATORY CONTROL SAMPLE

ICP/AA
(UNITS-mg/l)

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>%RECOVERY</u>
BERYLLIUM	0.50	0.453	91
CADMIUM	0.50	0.483	97
CHROMIUM	0.50	0.475	95
COPPER	0.50	0.467	93
MERCURY	0.002	0.00212	106
NICKEL	0.50	0.491	98
SILVER	0.50	0.485	97
ZINC	0.50	0.475	95

JUNE 22, 1995


WAYNE L. COOPER P.D.
LABORATORY DIRECTOR

CHAIN OF CUSTODY RECORDSHEET 1 of 1

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DR.
MARYLAND HEIGHTS, MISSOURI 63043
314-429-0100

PROJECT NO:		PROJECT NAME:		NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED				REMARKS
C3M10Q1		NL / Taracord			1-11 Poly 1-12 Poly 1-13 Poly 1-14 Poly 1-15 Poly 1-16 Poly 1-17 Poly 1-18 Poly 1-19 Poly 1-20 Poly				
SAMPLER'S: (Signature)					1-15 Filled 1-16 Filled 1-17 Filled 1-18 Filled 1-19 Filled 1-20 Filled				
DATE	TIME	SAMPLE I.D. NUMBER							
6/14	950	WMW10Z-1		2	X	X			
↓	1040	WMW101-1		2	X	X			
↓	1110	WMW10A-1		2	X	R			
RELINQUISHED BY: (Signature)		DATE / TIME		RECEIVED BY: (Signature)				DATE / TIME	
E		6/14 1535		J				6/14/95 335	
RELINQUISHED BY: (Signature)		DATE / TIME		RECEIVED AT LAB BY: (Signature)				DATE / TIME	
METHOD OF SHIPMENT:				AIRBILL NO:					

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

coc : 010176

Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Eric Page

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/ TERRACORP

Date Due (Client): 06/28/95 P.O. #:

Mode: Mail quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000267-001-01	WMW10Z-1	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
FIELD FILTERED 9506000267-001-02	WMW10Z-1	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A
FIELD FILTERED 9506000267-002-01	WMW10I-1	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A
9506000267-002-02	WMW10I-1	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 2

coc : 010176

Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Eric Page

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/TERRACORP

Date Due (Client): 06/28/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp</u>	<u>Tests</u>
9506000267-002-02	WMW101-1	GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
9506000267-003-01	WMW104-1	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 CADMIUM-SW-846 6010A CHROMIUM-SW-846 6010A SILVER-SW-846 6010A MERCURY-SW-846 7470A NICKEL-SW-846 6010A COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A ZINC-SW-846 6010A
FIELD FILTERED 9506000267-003-02	WMW104-1	Sample Instructions: GROUND WATER	1-1 LITER PLASTIC	Nitric Acid	06/14/95		DISSOLVED ANTIMONY-SW-846 7041 DISSOLVED ARSENIC-SW-846 7060 DISSOLVED BERYLLIUM-SW-846 6010A Diss. CADMIUM-SW-846 6010A Diss. CHROMIUM-SW-846 6010A Diss. COPPER-SW-846 6010A Diss. LEAD-SW-846 7421 Diss. MERCURY-SW-846 7470 Diss. NICKEL-SW-846 6010A Diss. SELENIUM-SW-846 7740 Diss. SILVER-SW-846 6010A Diss. THALLIUM-SW-846 7841 Diss. ZINC-SW-846 6010A

Sample Instructions:

<u>Items Transferred</u> 6	<u>Relinquished By</u>	<u>Date</u> 06/14/95	<u>PM Signature :</u> Anne Morris Client Services Rep.	<u>Logged In By</u> Phyllis Woods Login Coordinator	<u>Date</u> 06/14/95	<u>Time</u> 16:12:25
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coc : 010176
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Eric Page

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

Date Received: 06/14/95

Date Logged: 06/14/95

Status: Normal/LEVEL 5

Date Due (PM): 06/26/95 Proj #: C3M11Q1 NL/TERRACORP
Date Due (Client): 06/28/95 P.O. #:
Mode: Mail Print #:

MAM ✓
10-27-95

METALS/WET CHEMISTRY DATA ASSESSMENT

PROJECT NO. C3m11Q1
LABORATORY ENVIRONMETRICS
LAB PROJECT NO. 34119
NO. OF SAMPLES/
MATRIX 21 WATER

SITE NL/TARA CORP

REVIEWER Woodward-Clyde Consultants
REVIEWER'S NAME WENDY REDWOLD
COMPLETION DATE 10/24/95

DATA ASSESSMENT WORKSHEET

	<u>ICP/AA</u> Meth # <u>6010A</u>	<u>GFAA</u> Meth # <u>7041, 7060</u> <u>7421, 7740</u> <u>✓ 7841</u>	Meth #	Meth #	Meth #
1. HOLDING TIMES	<u>✓</u>				
2. BLANKS	<u>(1)</u>	<u>(2)</u>			
3. SCS	<u>✓</u>	<u>✓</u>			
4. DCS	<u>NA</u>	<u>NA</u>			
5. DILUTION	<u>✓</u>	<u>✓</u>			
6. OTHER QC	<u>NA</u>	<u>NA</u>			
7. OVERALL ASSESSMENT	<u>O</u>	<u>O</u>			

O = Data had no problems/or qualified due to minor problems.

M = Data qualified due to major problems.

Z = Data unacceptable.

X = Problems, but do not affect data.

ACTION ITEMS: (1) BERYLLIUM DETECTED IN PREP BLANK BELOW DETECTION LIMIT. RESULT WAS BROUGHT UP TO THE DETECTION LIMIT AND QUALIFIED AS NON-DETECT (U). (2) ANTIMONY AND SELENIUM DETECTED IN PREP BLANK. BLANK RESULT WAS MULTIPLIED BY DILUTION FACTOR AND 5X. ALL RESULTS DETECTED BELOW THE MULTIPLIED BLANK RESULT WERE QUALIFIED AS NON-DETECT (U).

COMMENTS:

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

October 9, 1995

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

Attn: Melissa Moore

Enclosed you will find analytical reports for the samples described below:

Date Received: 09/26/95
Chain of Custody Number: 010370
Environmetrics Laboratory Number: 9509/425

I have reviewed the data generated by the laboratory and have found the data to conform to the applicable methods and QC criteria. If you have any questions, please feel free to call me at (314) 427-0550.

Sincerely,



Anne Arnold
Project Manager

Enclosure: Invoice Number 34119

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Melissa Moore

INVOICE: 34119

PO: --

PROJECT NO: GRANITE CITY NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WW1443-2

LAB ID: 9509000425-002

DATE COLLECTED: 09/26/95

DATE RECEIVED: 09/26/95 15:44

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	<0.0012	mg/L
TOTAL ARSENIC	SW-846 7060	0.0008	mg/L
TOTAL BERYLLIUM	SW-846 6010A	<0.005	mg/L
TOTAL CADMIUM	SW-846 6010A	<0.005	mg/L
TOTAL CHROMIUM	SW-846 6010A	<0.010	mg/L
TOTAL COPPER	SW-846 6010A	<0.025	mg/L
TOTAL LEAD	SW-846 7421	0.00120	mg/L
TOTAL MERCURY	SW-846 7470A	<0.0002	mg/L
TOTAL NICKEL	SW-846 6010A	<0.040	mg/L
TOTAL SELENIUM	SW-846 7740	0.00370	mg/L
TOTAL SILVER	SW-846 6010A	<0.010	mg/L
TOTAL THALLIUM	SW-846 7841	<0.0010	mg/L
TOTAL ZINC	SW-846 6010A	<0.020	mg/L

Woodward-Clyde Consultants
2318 Millpark Drive
Maryland Heights, Mo. 63043

ATTN: Melissa Moore

INVOICE: 34119

PO: ---

PROJECT NO: GRANITE CITY NL/TARACORP

ENVIRONMETRICS

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ANALYSIS RESULTS

SAMPLE ID: WW1443-1
LAB ID: 9509000425-001
DATE COLLECTED: 09/26/95
DATE RECEIVED: 09/26/95 15:44

<u>TEST PERFORMED</u>	<u>METHOD OF ANALYSIS</u>	<u>RESULTS</u>	<u>ANALYST</u>
TOTAL ANTIMONY	SW-846 7041	0.0015	mg/L 4 10/05/95 B.C.
TOTAL ARSENIC	SW-846 7060	0.0023	mg/L
TOTAL BERYLLIUM	SW-846 6010A	<0.005	mg/L
TOTAL CADMIUM	SW-846 6010A	<0.005	mg/L
TOTAL CHROMIUM	SW-846 6010A	<0.010	mg/L
TOTAL COPPER	SW-846 6010A	<0.025	mg/L
TOTAL LEAD	SW-846 7421	0.00500	mg/L
TOTAL MERCURY	SW-846 7470A	<0.0002	mg/L
TOTAL NICKEL	SW-846 6010A	<0.040	mg/L
TOTAL SELENIUM	SW-846 7740	0.00210	mg/L
TOTAL SILVER	SW-846 6010A	<0.010	mg/L
TOTAL THALLIUM	SW-846 7841	0.00110	mg/L
TOTAL ZINC	SW-846 6010A	<0.020	mg/L

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

ENVIRONMETRICS
2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: MELISSA MOORE

INVOICE # 34119
PROJECT # GRANITE CITY NL/TARACORP

PREPARATION BLANK
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-123

PREP. DATE: 9/27/95

<u>ELEMENT</u>	<u>BLANK RESULT</u>
BERYLLIUM	-0.0004 - 0.005 u
CADMUM	<0.005
CHROMIUM	<0.009
COPPER	<0.006
MERCURY	<0.0002
NICKEL	<0.010
SILVER	<0.005
ZINC	<0.004

LABORATORY CONTROL SAMPLE
ICP/AA
(UNITS = mg/l)

PREP. CODE: MP-252-123

PREP. DATE: 9/27/95

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>PERCENT RECOVERY</u>
BERYLLIUM	0.50	0.457	91
CADMUM	0.50	0.477	95
CHROMIUM	0.50	0.473	95
COPPER	0.50	0.471	94
MERCURY	0.002	0.00197	98
NICKEL	0.50	0.453	91
SILVER	0.50	0.463	93
ZINC	0.50	0.468	94

ENVIRONMETRICS

WOODWARD-CLYDE CONSULTANTS
2318 MILLPARK DRIVE
MARYLAND HEIGHTS, MO 63043

2345 Millpark Drive
Maryland Heights, MO 63043-3529
(314) 427-0550

ATTN: MELISSA MOORE

INVOICE # 34119
PROJECT # GRANITE CITY NL/TARACORP

PREPARATION BLANK
GRAPHITE FURNACE ATOMIC ABSORPTION
(UNITS = mg/l)

PREP. CODE: MP-195-69

PREP. DATE: 9/26/95

<u>ELEMENT</u>	<u>BLANK RESULT</u>
ANTIMONY	0.0080
ARSENIC	<0.0004
LEAD	<0.0013
SELENIUM	0.0004
THALLIUM	<0.0010

LABORATORY CONTROL SAMPLE
GRAPHITE FURNACE ATOMIC ABSORPTION
(UNITS = mg/l)

PREP. CODE: MP-195-69

PREP. DATE: 9/26/95

<u>ELEMENT</u>	<u>VALUE</u>	<u>RESULT</u>	<u>PERCENT RECOVERY</u>
ANTIMONY	0.100	0.1111	111
ARSENIC	0.050	0.0574	115
LEAD	0.020	0.0225	112
SELENIUM	0.025	0.0288	115
THALLIUM	0.050	0.0526	105

CHAIN OF CUSTODY RECORD

SHEET ___ of ___

WOODWARD-CLYDE CONSULTANTS
 2318 MILLPARK DR.
 MARYLAND HEIGHTS, MISSOURI 63043
 314-429-0100

PROJECT NO:		PROJECT NAME:	NO. OF CONTAINERS	CONTAINER DESCRIPTION / ANALYSES REQUESTED					REMARKS
		Granite City NLTARACORP			TALL LIGHT BLACK C1-C4 AS-T3	SPLASH C1-C4 AS-T3			
DATE	TIME	SAMPLE I.D. NUMBER	1	X					
9-26-95	1325	WW1443-1	1	X					Per conv w/melissa
9-26-95	1350	WW1443-2							go off taracorp list from previous job © 9/26/95
									Quote K1514
RELINQUISHED BY: (Signature)		DATE / TIME	RECEIVED BY: (Signature)			DATE / TIME			
Melissa Moore		9/26/95	P Woods			9/26/95			
RELINQUISHED BY: (Signature)		DATE / TIME	RECEIVED AT LAB BY: (Signature)			DATE / TIME			
METHOD OF SHIPMENT:				AIRBILL NO:					

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

COC : 010370

Woodward-Clyde Consultants - W088
 2318 Millpark Drive
 Maryland Heights, Mo. 63043
 Melissa Moore

Date Received: 09/26/95

Date Logged: 09/26/95

Status: Normal/LEVEL 5

Date Due (PM): 10/06/95 Proj #: GRANITE CITY NL/TARACORP

Date Due (Client): 10/10/95 P.O. #:

Mode: Mail Quot #:

<u>Sample Id. No.</u>	<u>Client Sample Name/Number</u>	<u>Matrix</u>	<u>Container</u>	<u>Preservative</u>	<u>Date Collected</u>	<u>Temp Tests</u>
25097 9509000425-001-01	WW1443-1	WASTE WATER	1-1 LITER PLASTIC	Nitric Acid	09/26/95	TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 PREPARATION,WATER, (Total)-SW-846 3010A PREPARATION,WATER, (Total)-SW-846 3020 TOTAL CADMIUM-SW-846 6010A TOTAL CHROMIUM-SW-846 6010A TOTAL SILVER-SW-846 6010A TOTAL MERCURY-SW-846 7470A TOTAL NICKEL-SW-846 6010A TOTAL COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A TOTAL ZINC-SW-846 6010A
25098 9509000425-002-02	WW1443-2	WASTE WATER	1-1 LITER PLASTIC	Nitric Acid	09/26/95	TOTAL ANTIMONY-SW-846 7041 TOTAL ARSENIC-SW-846 7060 LEAD-SW-846 7421 SELENIUM-SW-846 7740 THALLIUM-SW-846 7841 PREPARATION,WATER, (Total)-SW-846 3010A PREPARATION,WATER, (Total)-SW-846 3020 TOTAL CADMIUM-SW-846 6010A TOTAL CHROMIUM-SW-846 6010A TOTAL SILVER-SW-846 6010A TOTAL MERCURY-SW-846 7470A TOTAL NICKEL-SW-846 6010A TOTAL COPPER-SW-846 6010A TOTAL BERYLLIUM-SW-846 6010A TOTAL ZINC-SW-846 6010A

Sample Instructions:

Sample Instructions:

<u>Items Transferred</u> 2	<u>Relinquished By</u>	<u>Date</u> 09/26/95	<u>PM Signature:</u> Anne Arnold Client Services Rep. <i>KE</i> <i>Anne Arnold</i>	<u>Logged In By</u> Phyllis Woods Login Coordinator	<u>Date</u> 09/26/95	<u>Time</u> 15:44:56
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Please Note Attached Sheet w/ special Detection limits
(KE)

coc : 010370
Woodward-Clyde Consultants - W088
2318 Millpark Drive
Maryland Heights, Mo. 63043
Melissa Moore

INTERNAL CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

Page 1

Date Received: 09/26/95

Date Logged: 09/26/95TM

status: Normal/LEVEL 5

Date Due (PM): 10/06/95 Proj #: GRANITE CITY NL/TARACORP
Date Due (Client): 10/10/95 P.O. #:
Mode: Mail Quot #:

INVOICE NUMBER: 0034119-IN

WOODWARD-CLYDE CONSULTANTS
ACCOUNTS PAYABLE
2318 MILLPARK DRIVE
MARYLAND HEIGHTS MO 63043-

INVOICE DATE: 10/09/95

CUSTOMER NO: W088

CUSTOMER P.O.: N/L TARACORP

COMMENTS:

ATTN: MELISSA MOORE

TERMS:

DUE UPON RECEIPT

SALES CD DESCRIPTION		QUANTITY	PRICE	AMOUNT
W080N	MERCURY, COLD VAPOR	EACH	2.000	20.000
W085N	METALS, ICP	EACH	14.000	10.000
W095N	METALS, GFAA	EACH	10.000	20.000

LAB #9509/425

COPY

NET INVOICE: 380.00

INVOICE TOTAL: 380.00

ATTACHMENT 2



DEPARTMENT OF THE ARMY
MISSOURI RIVER DIVISION, CORPS OF ENGINEERS
DIVISION LABORATORY
OMAHA, NEBRASKA 68102

11 OCT 1995

Subject: Chemical Quality Assurance ReportProject: N L Industries - Taracorp - 4th Qtr 95 GW Sampling, ILIntended Use: Superfund Pre-Design

Source of Material: _____

Submitted by: Gene Liu, CEMRO-ED-EDDate Sampled: 15 Jun 95, Date Received: 16 Jun 95Method of Test or Specification: See attached tables 001 - 005.References: Omaha District Request No. ENE 2688 dated 13 Nov 91

-- REMARKS --

1. CONTRACTOR DATA EVALUATION: The contract laboratory (Environmetrics Laboratory of St. Louis, MO) performed the analyses using EPA methods. Proper quality control procedures were followed and documented. The data package met the USACE HTW minimum chemistry reporting requirements as specified in ER 1110-1-263 (dated 1 Oct 90).

This report is a review of the Contractor's data associated with the five split samples received by MRD Laboratory. The samples were analyzed for metals (beryllium, cadmium, chromium, copper, nickel, silver, and zinc by EPA method 6010; antimony by EPA method 7041, arsenic by EPA method 7060, lead by EPA method 7421, mercury by EPA method 7470, selenium by EPA method 7740, and thallium by EPA method 7841.

- a. ACCURACY: Factors indicating the accuracy of the Contractor's data include:
 - 1) Matrix spike/matrix spike duplicate (MS/MSD) recoveries for metals were within acceptable limits except for selenium (142%, 141%, 71% and 61%) and antimony (70%) recoveries.
 - 2) Laboratory control sample (LCS) recoveries which for metals were within acceptable limits.
- b. PRECISION: Factors indicating the precision of the Contractor's data include:
 - 1) Relative percent differences (RPD) for MS/MSD which for metals were within acceptable limits.
 - 2) RPD for LCS which for metals were not reported.
 - 3) Laboratory duplicates which for metals were not reported.

SM for LP 10-5-95
Percifield/glm/444-4313

- c. LABORATORY CONTAMINANTS: Half of the method blanks contained one or more of the following metals antimony (3.9-5.7 $\mu\text{g/L}$), lead (1.3 $\mu\text{g/L}$), selenium (1.2 $\mu\text{g/L}$) and zinc (21 $\mu\text{g/L}$).
 - d. HOLDING TIMES: Holding times were met.
2. QA/QC COMPARISON: Split and/or duplicate samples were submitted to MRD Laboratory for analysis. Comparison of the quality assurance (QA) and contractor test results are presented in tables 001-005. Data discrepancies were noted for the following sample pairs:
- a. Sample WMM108-DOGGWF vs. WMM108-DOGGWF (Table 003)
 - 1) Metals: a minor discrepancy in the values for selenium; and a major discrepancy in the values for zinc.

The major discrepancy for zinc could have been caused by a filtering problem.

3. OBSERVATIONS:

- a. Digestion dates were not reported in the data package.
- b. The following shipping and chain-of-custody errors were noted for the sample shipments received by MRD Laboratory:
 - 1) For the cooler that arrived on 16 Jun 95 some samples were not sealed in separate plastic bags.
 - 2) Sample WMM108-DOGGWQ for metals analysis was not preserved. This sample was preserved at the MRD Laboratory.

4. QUALITY ASSURANCE SUPPORT ACTION: Sample receipt was completed by the MRD Laboratory Project Manager in conjunction with the Omaha District. Copies of cooler receipt forms and custody papers were furnished to the Omaha District personnel on a daily basis.
5. SUMMARY: The data package submitted for this project met the USACE minimum chemistry data reporting requirements. The data packages were well organized and easy to follow.

The method quality control review indicated that the information provided supported the quality of the project data.

A data discrepancy was noted for one water sample. The data comparisons support the acceptability of the contract laboratory data.

Submitted by:

Douglas B. Taggart

DOUGLAS B. TAGGART
Director, MRD Laboratory

**DEPARTMENT OF THE ARMY
Missouri River Division, Corps of Engineers
Division Laboratory
Omaha, Nebraska**

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL
 QA Sample ID.: WMW112-10GGWT Contractor's Sample ID.: WMW112-10GGWB
 Material Description: Water Date Sampled: 15 Jun 95

Analysis	QA Lab Result	Contractor Result	Units	Analysis	QA Lab Result	Contractor Result	Units
TOTAL METALS							
Antimony	<50	<1.2	µg/L	Lead	<2	<0.9	µg/L
Arsenic	<2	<0.4	µg/L	Mercury	<0.2	<0.2	µg/L
Beryllium	<2	<5	µg/L	Nickel	<10	<40	µg/L
Cadmium	<4	<5	µg/L	Selenium	<2	0.9	µg/L
Chromium	<5	<10	µg/L	Silver	<5	<10	µg/L
Copper	<5	<25	µg/L	Thallium	<2	<1	µg/L
				Zinc	7	<20	µg/L

Table 002

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL
 QA Sample ID.: WMW108-DOGGWQ Contractor's Sample ID.: WMW108-DOGGW
 Material Description: Water Date Sampled: 15 Jun 95

Analysis	QA Lab Result	Contractor Result	Units	Analysis	QA Lab Result	Contractor Result	Units
TOTAL METALS							
Antimony	<150	<1.2	µg/L	Lead	2	1.10	µg/L
Arsenic	7	3.20	µg/L	Mercury	<0.2	<0.2	µg/L
Beryllium	<6	<5	µg/L	Nickel	164	137	µg/L
Cadmium	117	46.0	µg/L	Selenium	2	<0.8	µg/L
Chromium	<15	<10	µg/L	Silver	<15	<10	µg/L
Copper	<15	<25	µg/L	Thallium	<2	<1.0	µg/L
				Zinc	6080	4780	µg/L

COMMENTS:

Data agreed.

Table 003

Page 1 of 1

**DEPARTMENT OF THE ARMY
Missouri River Division, Corps of Engineers
Division Laboratory
Omaha, Nebraska**

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL
 QA Sample ID.: WMM108-DOGGWF
 Material Description: Water Contractor's Sample ID.: WMM108-DOGGWF
 Date Sampled: 15 Jun 95

Analysis	QA Lab Result	Contractor Result	Units	Analysis	QA Lab Result	Contractor Result	Units
DISSOLVED METALS							
Antimony	<150	<1.2	µg/L	Lead	<2	<0.9	µg/L
Arsenic	5	2.80	µg/L	Mercury	<0.2	<0.2	µg/L
Beryllium	<6	<5	µg/L	Nickel	160	120	µg/L
Cadmium	<12	<5	µg/L	Selenium	3	* <0.8	µg/L
Chromium	<15	<10	µg/L	Silver	<15	<10	µg/L
Copper	<15	<25	µg/L	Thallium	<2	<1.0	µg/L
				Zinc	<12	** 2300	µg/L

Table 004

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL
 QA Sample ID.: WMM104920GGW(Q,R,S)
 Material Description: Water Contractor's Sample ID.: WMM104920GGW
 Date Sampled: 15 Jun 95

Analysis	QA Lab Result	Contractor Result	Units	Analysis	QA Lab Result	Contractor Result	Units
TOTAL METALS							
Antimony	<50	2.2	µg/L	Lead	259	186	µg/L
Arsenic	3	2.1	µg/L	Mercury	<0.2	<0.2	µg/L
Beryllium	<2	<5	µg/L	Nickel	<10	<40	µg/L
Cadmium	<4	<5	µg/L	Selenium	<2	<0.8	µg/L
Chromium	<5	<10	µg/L	Silver	<5	<10	µg/L
Copper	5	<25	µg/L	Thallium	<2	<1.0	µg/L
				Zinc	12	<20	µg/L

COMMENTS:

*: Data disagreement.

**: Major data disagreement.

**DEPARTMENT OF THE ARMY
Missouri River Division, Corps of Engineers
Division Laboratory
Omaha, Nebraska**

COMPARISON OF QA & CONTRACTOR RESULTS

Project: N L Industries - Taracorp - 4TH Qtr 95 GW Sampling, IL
 QA Sample ID.: WMW104920GGWF Contractor's Sample ID.: WMW104920GGWF
 Material Description: Water Date Sampled: 15 Jun 95

Analysis	QA Lab Result	Contractor Result	Units	Analysis	QA Lab Result	Contractor Result	Units
DISSOLVED METALS							
Antimony	<50	<1.2	µg/L	Lead	3	1.40	µg/L
Arsenic	<2	1.30	µg/L	Mercury	<0.2	<0.2	µg/L
Beryllium	<2	<5	µg/L	Nickel	<10	<40	µg/L
Cadmium	<4	<5	µg/L	Selenium	<2	<0.8	µg/L
Chromium	<5	<10	µg/L	Silver	<5	<10	µg/L
Copper	<5	<25	µg/L	Thallium	<2	<1	µg/L
				Zinc	17	<20	µg/L

COMMENTS:

Data agreed.
